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This publication provides an introduction to manpower education and presents a summary report on a 2-year research and curriculum development project for manpower and economic education at the junior high school level. The introduction includes "The Meaning of Manpower Education" and "Major Themes for A Manpower Education Course" which outlines and illustrates 78 important concepts in the course. Objectives of the project were to identify content and placement level, to develop materials and field test them, and to disseminate the results. A text, a teacher manual, and tests of knowledge and attitude changes were developed and tested. The text and manual titled "Manpower and Economic Education" are available from the Interstate Printers and Publishers for $3.50 and $1.50 respectively. Evaluation results indicated a knowledge gain of 39.6 percent for the experimental group and 6.2 percent for the control group and attitude changes on 21 out of 62 items for the experimental group while the control group only changed 11 items. (EM)

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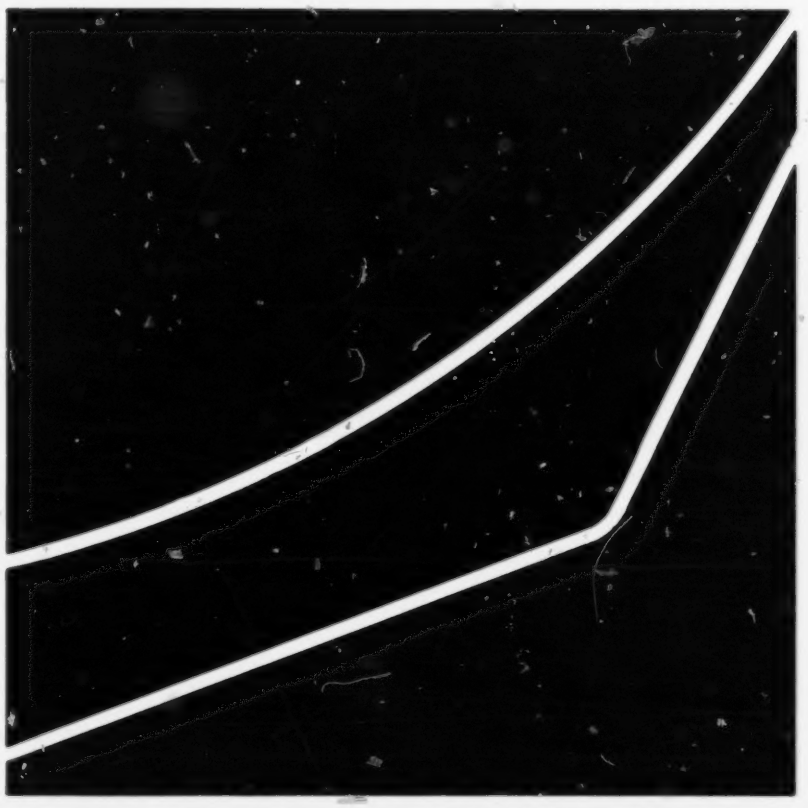

MANPOWER EDUCATION in a GROWING ECONOMY

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"Education must provide, as a basic part of its human development responsibility, the preparation needed for effective participation in our economic life."

President Lyndon B. Johnson

"The coming decade is going to present a mixed picture of opportunity and trouble — both perhaps on a larger scale than we have ever known. Indeed, it is not too much to say that the changing shape of the world of work is *the* economic challenge before the American economic system."

Robert L. Heilbroner, Economist

"Technology has created a new relationship between man, his education, and his work, a relationship which places education squarely between man and his work."

Grant Venn, Educational Administrator

"Education is not simply a matter of learning to market oneself, but of discovering oneself."

W. Wesley Tennyson, Educational Psychologist

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Manpower Education in a Growing Economy

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

By

Robert L. Darcy *and* Phillip E. Powell

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Center for Economic Education
College of Business Administration
Ohio University
Athens, Ohio

* * *

August 1968

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About the authors . . .

ROBERT L. DARCY, who served as principal investigator of the MD/OAEL project, was Director of the Center for Economic Education and Associate Professor of Economics at Ohio University from 1961 until July, 1968. Effective September, 1968, he is Professor of Economics, Colorado State University, Fort Collins, Colorado.

* * *

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Preface & Acknowledgments

This publication provides a brief introduction to manpower education and presents a summary report on a two-year research and curriculum development project in the area of manpower and economic education carried out in the Center for Economic Education (CFEE), Ohio University, under a grant from the U. S. Office of Education. The project was funded under the Vocational Education Act of 1963, section 4(c) and was administered by the USOE's Division of Comprehensive and Vocational Education Research. Part of the project cost was borne by Ohio University. The project was carried out during the period July 1, 1966 through June 30, 1968.

The immediate objective of the project was to develop and field-test an instructional program for use in junior and senior high schools that would help young people prepare for the changing world of work and for successful participation in American economic life. The purpose of this particular publication, *Manpower Education in a Growing Economy,* is to provide educators, economists, government officials, and leaders from business, labor, and other fields with a brief description of the experimental program and a report on the measured effects that the course has had on student understanding, attitudes, and behavior.

The official title of the project is "An Experimental Junior High School Course in Occupational Opportunities and Labor Market Processes" (Office of Education grant no. 3-6-051203-2080), but it has been commonly referred to as the "MD/OAEL Project"—"Manpower Development: Opportunities in American Economic Life". The experimental one-semester course was taught to 750 students in the eighth, ninth, and tenth grades in Zanesville, Lancaster, and Columbus (Ohio) during the fall semester, 1967-68.

In May, 1968, a revised experimental edition of the course text was published (initially for controlled dissemination, under special authorization of the U. S. Office of Education) by the Joint Council on Economic Education, 1212 Avenue of the Americas, New York 10036, and The

Interstate Printers and Publishers, Inc., Danville, Illinois 61832. The title of the published course is *Manpower & Economic Education: Opportunities in American Economic Life.* The 316-page text and companion 141-page *Teacher Manual* can be purchased from the Joint Council on Economic Education.

In July, 1968, a comprehensive, 599-page "Final Report on the MD/OAEL Project" was filed with the U. S. Office of Education. (Inquiries concerning the Final Report should be addressed to: Division of Research, College of Business Administration, Ohio University, Athens, Ohio 45701.)

* * *

We would like to express our appreciation to the Martha Holden Jennings Foundation, Cleveland, Ohio, for a grant which made possible the production and distribution of this publication. Grateful acknowledgement is also given to the many consultants, teachers, students, school administrators, and other interested persons who contributed to the success of the project.

R. L. Darcy
P. E. Powell

July, 1968

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ONE

The Meaning of Manpower Education

Sweeping changes are taking place in the socio-economic life of the American people in the 1960's, changes that are caused in large part by technological advance, automation, and cybernation. Other forces are also at work: population growth; upheavals involving women, Negroes, and youth; hot and cold wars; and new ideas about standards and patterns of behavior in social, political, and economic life.

The term "Manpower Revolution" has been coined to refer to a number of these changes occurring in our economy, including increased participation of women in the labor force, the rise of white-collar and service-producing workers, and the demand for ever higher levels of manpower skill. The manpower revolution is modifying our physical and social environment and is defining a new role for men and women to play in economic life. As the evolution of our industrial economy continues and accelerates, there is a growing awareness of the supreme importance of human resources in the economic process and the need continually to upgrade the quality of human effort devoted to production by investing in human resources.

Manpower development is thus a clear policy implication of the manpower revolution. There is a need to improve the capacity of men and women to participate successfully in the labor force. The goal of manpower development programs is to enhance the employability, productivity, earnings, and work satisfaction of men and women by helping to increase their knowledge, skills, creativity, vocational competencies, and motivation. The payoff from successful programs of manpower development—defining the term broadly to include general schooling as well as job training —is a more productive work force, less unemployment, higher incomes, a reduction in poverty, and a more satisfied population.

The analysis and encouragement of manpower development is one important facet of Manpower Education. But there is a second dimension, which we may call *manpower/economic understanding*. This requires an understanding

of how the economic system functions; the role of human resources—men and women in their capacity as workers—in the process of production and distribution; and the implications of the sometimes-forgotten fact that man is more than a means of production: he is also a *citizen,* a *consumer,* and most important of all, a *person.* Man is a curious being, a rational animal; he wants to know where he fits into the pattern of life. Since he spends one-third of his adult life working on the job, he is curious to know what he is doing, why, and how it relates to what other people are doing. Not only can this sense of perspective and orientation help him understand himself and the world around him, it can also make him a more productive member of the economic community and of society.

As Figure 1 illustrates, the vast majority of men and women in our society play three different economic roles.

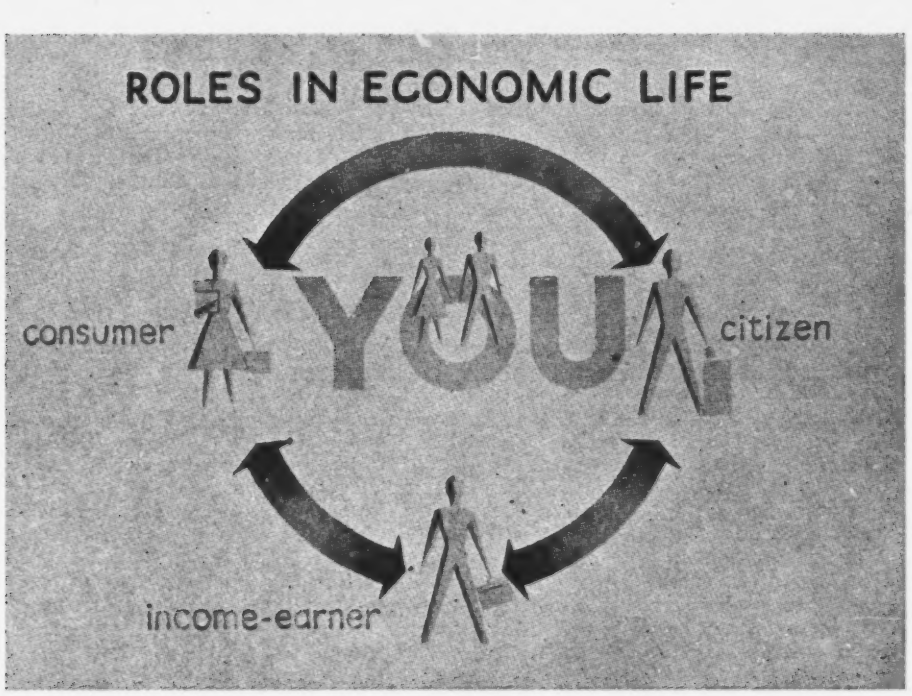


Fig. 1. Individuals play three different roles in economic life.

First, they are all *Consumers* and must make choices and decisions about spending, saving, borrowing, and lending. Second, they are *Citizens* and must make decisions at the ballot box, about issues such as taxes, school budgets, and

social security programs—and about candidates for public office. Third, they are *Workers* (or *Income-earners*) who need to qualify for employment and earnings by acquiring occupational skills for which a demand exists in the manpower market.

The basic rationale of the MD/OAEL program is simply this: To function effectively and make intelligent choices and decisions about economic matters, men and women must have economic understanding. Functional economic literacy is not something that is simply "picked up" over a period of years; it must be acquired through study, which is a form of investment in one's own "human capital". Just as a student can learn skills that will make him a more effective consumer and citizen, he can also acquire understandings and skills that will make him more effective as a worker and income-earner. To quote the Manpower Report of the President, education increasingly must provide "as a basic part of its human development responsibility, the preparation needed for effective participation in our economic life".

It may strike some readers as ironic that a new course in manpower education—designed to help prepare young people for the world of work—is being proposed for introduction into the school curriculum at this late date, 1968, "when work is soon to become obsolete". Many readers of the *Memorandum on the Triple Revolution* (published in 1964 by an Ad Hoc Committee and distributed by the Center for the Study of Democratic Institutions, Santa Barbara, California) were impressed with this account of the onset of the "cybernation revolution" (i.e., automation plus the electronic computer) and the potential havoc it might create if society did not act quickly to modify its values and institutions. Fears were expressed that millions of jobless people would soon be dumped on a "human slag heap" and relegated to the status of impoverished "minimum consumers" subsisting on the bare necessities of life—because machines had robbed them of their jobs and their opportunities to *earn* a decent living. Why prepare people for work, one might ask, when there won't be enough jobs?

Our response is that there *will* be jobs. Predictions of mass unemployment by 1974 (or even 1984) are *not* likely

to prove accurate in light of the rapid expansion of the service-producing industries, the expansion of manpower development programs, and the general growth of the U. S. economy. This is not to say that the insights (and warnings) contained in *The Triple Revolution* can safely be ignored. They can't. However, by late 1965, the unemployment rate had dropped below 4%; and—partly because of the Vietnam war, to be sure—we have remained at or near full employment ever since.

Apart from the unemployment statistics and the precise accuracy of the Ad Hoc Committee's predictions, the hypothesis of the cybernation revolution—with its companion proposal for a guaranteed annual income—has performed a valuable service by encouraging us to reexamine the function and values of *work* in American society. And from this reflection and debate has emerged a surprisingly strong, even fervent, attachment to the institution of work in American society, not only as a source of income, but also—as some lessons in the experimental MD/OAEL course point out—as an opportunity to help produce goods and services, a way to develop and conserve "human capital", and a means of satisfying certain noneconomic needs that men and women have. As some critics of the guaranteed income proposal have observed, income alone is not enough. The American people want opportunities for human development and for productive employment that will enable them to meet more of their needs than simply a basic level of consumption.

This perception of work, as a *potentially creative social institution* as well as a means of providing a living, is one of the paramount understandings that can be distilled from a thoughtful study of man, economics, education, and work.

TWO

Major Themes for A Manpower Education Course

In 1968, the Gross National Product of the U. S. economy will exceed $800 billion. At mid-year, some 80 million men and women were actively participating in the labor force and more than 19 out of 20 were employed. Personal Income per family unit exceeded $10,000 per year. Hourly earnings in manufacturing reached the $3.00 mark. In a single generation—the 28 years since 1940—our economy tripled its output of goods and services, created 25 million additional jobs, and stepped up its rate of technological advance and innovation to an almost dizzying pace.

The amazing performance of our prodigious American economy has been called by some "the eighth wonder of the world". Others have referred to a ninth wonder of the world—the equally amazing economic ignorance of the American people!

The directors and staff of the MD/OAEL project agree that the American economy is indeed a highly complex and wondrous mechanism. We believe also that the level of economic understanding of the American people leaves much to be desired. These deficiencies of understanding exist not only with respect to choices and problems facing the consumer, and questions of public policy facing the citizen, but also in terms of the role that men and women play as *human resources* in the economic process.

For many years the schools at all grade levels have been strengthening their curriculum offerings in *consumer economics* and *social economics,* frequently with encouragement and assistance from such organizations as the national Joint Council on Economic Education and state affiliates such as the Ohio Council on Economic Education. There apparently has been little previous attempt, however, to teach economics and develop an understanding of the economic process from the viewpoint of the individual as a *worker* and *income-earner*—focussing on the opportunities and problems men and women face in the economic world in their role as *human resources.* It is to help fill this gap—and to assist young people in making the transi-

tion from school to work—that the experimental MD/OAEL course was developed.

The content of the course is based on seven major topics and themes, which are sketched in the following pages. Our procedure will be to introduce the general theme with an overview and rationale, and then to present a capsule statement identifying the quintessential understanding to be derived from each of the 75 daily lessons included in the experimental course (omitting one purely review lesson). In most cases this involves excerpting from each of the actual lessons a hybrid of the introductory paragraph, or abstract, and the concluding paragraph, referred to in the published text as "Today's Lesson in Brief".

The sequence in which the themes appear in this summary is not the same order in which the lessons are taught in the course. Different themes and various types of lessons—cases, statistical data, verbal explanation and information—were intermingled in the experimental course in order to provide a change of pace and increase student interest and learning effectiveness. We present the lessons and themes in logical sequence here for purposes of clarity and continuity, ignoring pedagogical strategy. Statistical data used in this summary have in some cases been updated.

I. THE WORLD OF ECONOMICS

What is the most important single fact about the American economy? Scarcity of its resources? Abundance? The effectiveness of its incentive system—the acquisitive motive? Whatever else we might say about the economic process as we experience it in the United States, it seems perfectly clear that the American economy is highly *productive;* it is a *complex* mixture of private enterprise, government, giant corporations and labor unions, banks, and other institutions; economic activities are highly *specialized* and *interdependent;* and—perhaps most important of all—the economic world, and the technology that powers it, are continuously *changing*. The purpose of the 21 lessons included under the "The World of Economics" theme (comprising 28% of the experimental course) is to help young people make sense out of the kaleidoscopic U. S. economy

by identifying the key elements and central ideas in the *structure of economics,* describing the basic *skills* needed for effective economic analysis, and introducing a systematic five-step *method of economic reasoning* that can be applied with equal effectiveness to both personal and public economic decisionmaking.

* * *

I-1. What Is Economics All About? ECONOMICS is the study of how society organizes to develop, conserve, and use its productive resources (manpower, capital goods, and natural resources) to satisfy human wants. As Figure 2 illustrates, economics is concerned with three sets of forces —RESOURCES (everything that can be used in production), TECHNOLOGY (knowledge and skills), and INSTITUTIONS (social arrangements and organizations, such as money, corporations, labor unions, the legal rights of private property)—and how these forces *interact* on each other to determine how well off a society is in terms of the goods and services available to its people. Studying economics can benefit every individual by developing practical understandings that help us become more effective as *producers, consumers,* and *citizens.*

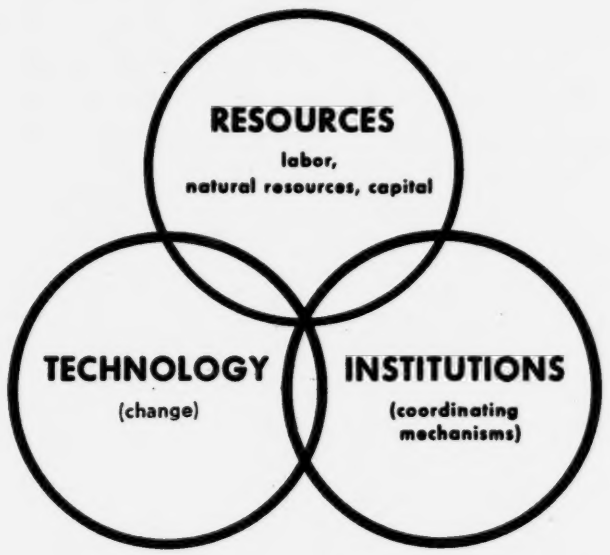


Fig. 2. Economics studies the interaction of Resources, Technology, and Institutions.

I-2. What Are the Three Basic Problems Facing Every Economic System? The people of every society are faced with three basic economic problems. They must organize their society to determine: (1) the TOTAL LEVEL of production; (2) the particular KINDS of goods and services to be produced; and (3) the DISTRIBUTION, or sharing, of the total income among the various members of society. These three basic problems have to be solved by the U. S. economy, the Russian economy, the Eskimo people living in the Arctic, and by every human society everywhere in the world. Economics can be viewed as the science which explains how the resources, technology, and institutions of a society interact to determine *how much* is produced, what *kinds* of goods and services are produced, and *for whom* they are produced.

I-3. Economic Institutions. An "institution" is an established pattern of group activity—a set way of doing things. Sometimes there are formal organizations (such as schools and industrial corporations) that provide a structure and agency for carrying on these activities (education and manufacturing automobiles). But an institution can exist without a formal organization. *Economic* institutions are the habits, arrangements, procedures, and established ways that people follow in using productive *resources*. Some important economic institutions are the labor market, the money and banking system, private property rights, progressive income taxes, labor unions, and the corporation. Institutions are man-made, rooted in the past, and some are very slow to change, even when technology is advancing rapidly and the size and structure of the economy are being dramatically altered. How to make wise institutional adjustments is one of the biggest continuing problems that society faces in a growing economy.

I-4. Capitalism: The Anatomy of Free Enterprise. The economic system of the United States is a *mixture* of private enterprise and government, of competition and "monopoly" power, of tradition and of the market mechanism. But even though it is a very complicated mixture of many things, it still remains basically a *capitalistic* system built on the foundation of Private property, the Profit motive, Free enterprise, Competition, and Market prices. These five in-

stitutions are the distinguishing features of a capitalistic economy.

I-5. The Circular Flow of Economic Activity. In every economic system, decisions must be made concerning the amounts and kinds of goods and services that are produced. Who makes these decisions in the U.S. economy, and how are they made? For the most part, in a basically private-enterprise system (ignoring Government) economic decisions are made by *Consumers, Business Firms,* and *Owners of Productive Resources.* The decisions are linked together and coordinated by flows of MONEY, and flows of GOODS & SERVICES, in a system of MARKETS, as illustrated in Figure 3.

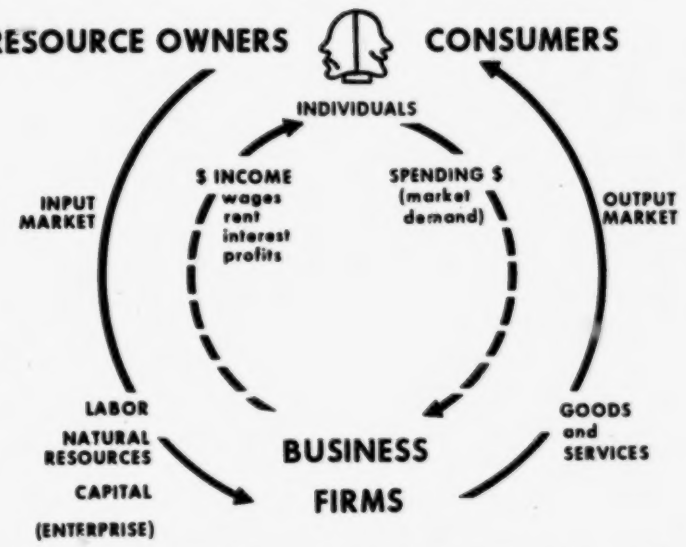


Fig. 3. The Circular Flow of Economic Activity links together the decisions of Resource Owners (including workers), Consumers, and Business Firms.

About four-fifths of the economic activity of the U. S. is based on decisions made in the private (non-government) section of the economy. There is a *circular flow* of money spent by CONSUMERS and BUSINESS FIRMS in one direction, and a corresponding flow of goods and services from RESOURCE OWNERS and BUSINESS FIRMS in the opposite direction. These flows show how the INPUT MARKET and the OUTPUT MARKET are joined together to coordinate the use of resources in a basically private-enterprise economy. *This model shows how the worker as a resource owner fits into the economic process.*

I-6. The Division of Labor and Economic Interdependence. Centuries ago, men and women learned they could produce more and better goods and services by *working together* as a team rather than working alone and trying to be a "jack of all trades". Adam Smith, "the father of economics", sang the praises of the division of labor and argued that it was the best way to increase The Wealth of Nations (the title of his famous book, published in 1776). But SPECIALIZATION OF LABOR (on the basis of comparative skill advantages) not only increases total production; it also increases the economic INTERDEPENDENCE of all members of society. As our economy becomes more highly specialized, individual workers become more productive; and consumer units become less self-sufficient.

I-7. Wages, Earnings, and Family Income. Wages are the financial rewards of work. Of the total National Income, nearly *three-fourths* is paid each year to *workers* as "Compensation of Employees". These wage earnings are the most important source of income for most families. Hourly wages, weekly earnings, and annual income vary greatly among workers and families. These wage and income differences are significant because there are strong linkages in our economy between jobs, earnings, consumer buying power, and levels of living.

The average production worker in manufacturing earns about $3.00 per hour ($120 per week). The *median* FAMILY in the U. S. receives about $7,500 of income per year. If all families are ranked according to the size of their income, the top one-fifth of all families in the U. S. get 41% of total income, while the lowest one-fifth get 5% of total income.

I-8. Gross National Product and Some Fundamentals of Economic Statistics. The *Gross National Product* (GNP) of any nation is the market value of all the goods and services that its people produce in a particular year. GNP statistics—measuring the dollar amounts of goods produced—can be useful because they give us important facts that help in studying how our economy is performing. Other "economic indicators" include the *Consumer Price Index* (which is used as a measure of inflation) and the *Unem-*

ployment Rate (which indicates how much of our available manpower the economy is wasting by not providing enough jobs.) *The ability to understand and use economic statistics is absolutely essential in order to read, think, and talk intelligently about economic questions.*

I-9. Scarcity, Opportunity Costs, and Choice. Because resources are "scarce" (in the sense that we don't have enough manpower, capital, and natural resources to produce all the goods and services that people would like to have) we must choose among alternative possible uses of the resources that are available. The concept of OPPORTUNITY COST helps in making these choices by showing the amounts of other goods and services that we have to give up when we decide to devote our available resources to one use rather than to another.

I-10. "There Is No Such Thing as a Free Lunch". One of the basic facts of economic life is that we, as a society, simply can't get "something for nothing". One particular person might get it for nothing, but it costs *somebody* something (perhaps a great deal of "something"). In economics, the OUTPUT of goods and services (like cars and candy and clothing) depends on the INPUT of productive resources such as manpower, capital equipment, and raw materials. There are always COSTS involved in the production of goods and services, and somebody pays these costs. Students enrolled in school can see that the time and personal effort they spend studying are part of the costs incurred in the process of investing in their own education. There is no "free lunch" when it comes to getting a good education.

I-11. Models, Theories, and the Real World. The economic world is so complicated and confusing—involving *millions* of people making *tens* of millions of decisions affecting the production of *billions* of dollars worth of goods and services—that we couldn't even begin to understand it without *simplifying* and carefully *organizing* the subject matter. In order to study and explain how the economy functions, economists have developed ANALYTICAL FRAMEWORKS (such as the Resources-Technology-Institutions approach to economic analysis described above),

simplified MODELS (such as the Circular Flow), and economic THEORIES (such as the Supply and Demand theory of employment and wages). Many of these intellectual constructs are very simple and also very useful for explaining and predicting economic behavior.

Theories that are "all right in theory, but don't work in practice" are really *not* "all right in thory". Only if a theory is useful in giving accurate explanations of economic behavior can it be termed a "good theory".

I-12. Economic Goals of the American People. Just as individual men and women have goals and aspirations—specific things they would like to accomplish—*groups* of people also have goals that they set for the whole society. In the area of economics, some important goals of the American people are:

Full Production (with minimum unemployment)

Stable Growth (without inflation)

Freedom of Choice (for consumers, workers, enterprisers)

Equality of Opportunity

Economic Security (and elimination of poverty)

Economic Justice

International Balance

To the extent that our economy comes reasonably close to achieving these goals, the system is judged to be performing successfully—because it is serving the needs of the people.

I-13. What Are the Steps in Economic Reasoning? Economic problems are like other kinds of problems. If you want to find good solutions, it helps to organize your thinking and use a systematic, step-by-step approach, as shown in Figure 4. This involves getting a good understanding of the problem, thinking clearly about your specific goals, looking at a variety of different possible solutions, and their likely consequences, and then making your own choices and decisions.

The *Five Steps in Economic Reasoning* that can help you find better solutions to many kinds of problems are:

1. *Define the Problem* (using History, Statistics, and Theory)
2. *Identify Goals* and underlying values
3. *Consider Alternative Measures* for achieving goals
4. *Analyze the Consequences* of the various alternatives
5. *Select Best Course of Action* in terms of stated goals.

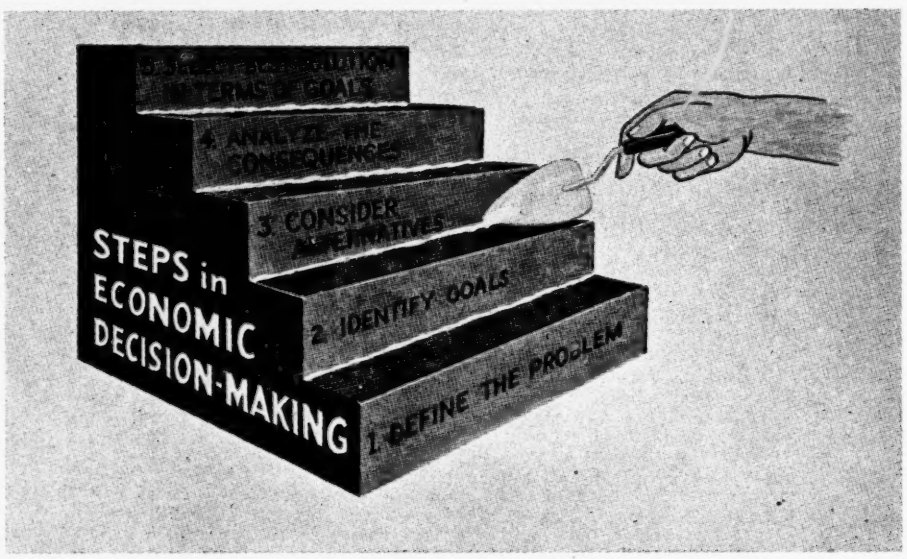


Fig. 4. Five steps in economic decisionmaking.

I-14. "The Business of America is Business". Calvin Coolidge, President of the United States in the 1920's, is remembered for making the statement that appears as the title of this lesson. While not everyone will agree with President Coolidge, it is nevertheless true that "Business" *is* an important part of the economic life of our nation—accounting for 80% of our total production and income. *Business firms,* hoping to gain profits, make many of the buying-selling-operating decisions that determine production, employment, and marketing in our economy. *Corporations*—one form of business organization—receive nearly four-fifths of all business income and manage two-thirds of the nation's total production. Some corporations have grown to tremendous size, receiving and spending *billons* of dollars and employing *hundreds of thousands* of workers.

I-15. Government's Role in Our Economic Life. Local, state and federal government play an active role in our economic life. Citizens of the community, the state, and the nation use these governmental units to make rules, exercise controls, and engage in activities that influence the production of goods and services, the level of employment, and the distribution of income in our economy. Altogether, government units generate or absorb over 20% of our Gross National Product. Taxing and spending by government affect the overall level of economic activity, the particular kinds of goods and services that are produced, and the way income is divided.

I-16. The Role of Labor Unions. Although labor unions have existed in the United States for more than a century, they did not become firmly established in our economy until the 1880's; and membership was small relative to the size of the labor force until the 1930's. Unions were organized to give workers a stronger voice in dealing with employers regarding wages, hours, working conditions, and job security. Today 18 million men and women, about one-fourth of all American workers, belong to unions. Workers are represented by *local* unions, *national* unions, and by the AFL-CIO, which is a *federation* of unions that serves as a national spokesman for union members on social, political, and economic issues.

I-17. Consumers of Abundance. There are about 60 million consumer households in the U. S. economy—48 million families and 12 million "unattached individuals". Together they spend half a trillion dollars a year for the purchase of goods and services to satisfy the needs and desires of 200 million Americans. Consumer spending plays an important role in the Circular Flow of Economic Activity by influencing the OVERALL LEVEL of market demand, and by sending "dollar messages" to business firms telling them which PARTICULAR goods and services to produce for sale in the market. By spending in the market, consumers obtain goods and services for use in satisfying human wants. The total amount and particular pattern of consumer spending are influenced both by the amount of available purchasing power and the way income and wealth are DISTRIBUTED in the economy.

I-18. Evolution of the Industrial System. Our present-day industrial economy has not always been the way it is today. It is the product of evolving technology, resources, and institutions based on our heritage from the past. The process by which this evolution took place was revealed in the Industrial Revolution that began in England after 1750 and spread throughout Europe and America in the 1880's. A process of continuing technological progress, economic development, and institutional change is going on right now, and can be expected to transform our lives in the future just as the Industrial Revolution changed the economic and social world of our forefathers in the 1880's and 1900's. (See Figure 5.) An understanding of the process of change can help us prepare for the challenges and opportunities of the future.

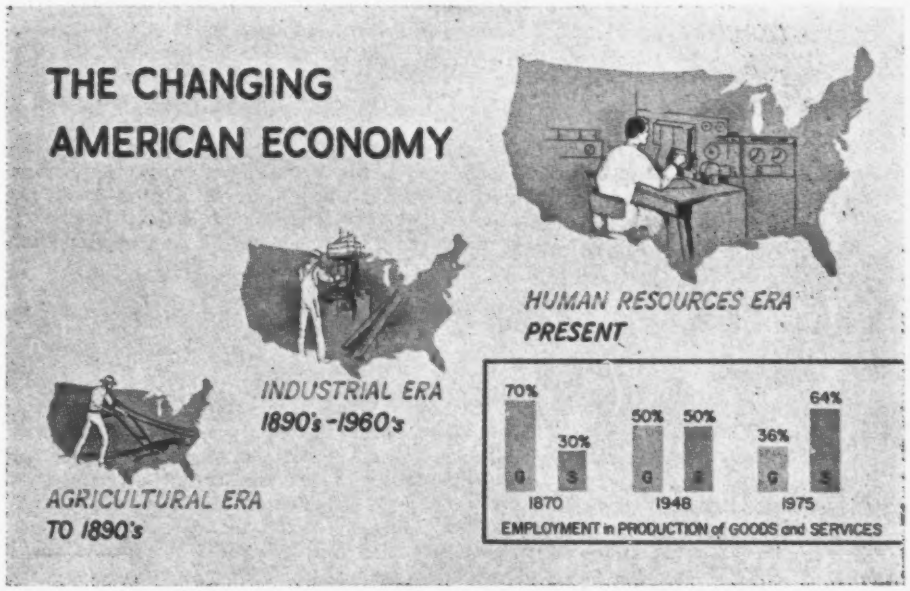


Fig. 5. The U. S. economy is constantly changing.

I-19. Education: Engine of Our Nation's Economic Growth. Economic growth—a steady increase in Gross National Product per person—is one of the most important goals of the American people. Growth is caused by increases in the *quantity* of productive resources available for use, improvements in the *quality* of resources, technological progress, and greater *efficiency* in production. Recent re-

search shows that EDUCATION stands out as one of the most important sources of American economic growth.

Research studies indicate that approximately one-fourth of the growth in national production in recent years is the direct result of increased educational attainment of the work force. Education also contributes to economic growth by helping expand knowledge which can be applied in production.

I-20. Will There Be Enough Jobs for Everyone? Workers who are employed can contribute to production, earn an income, and participate in useful activity. But jobs are not always available for everyone able and willing to work. In general, the total number of job opportunities that exist in the economy will depend on the total level of spending by Consumers, Business Firms (Investment), and Government (local, state, and federal). If *total spending* (aggregate market demand) is too low, there will not be enough jobs for everybody able and willing to work. If total spending is too high, the manpower market and the entire economy will be disrupted by *inflation*. If total spending is "just right" the economy can have reasonably *full employment* and *full production*, without inflation.

I-21. Will Economic Growth Solve All Our Problems? Economic growth is the steady increase of Gross National Product *per person*, year after year. It means more output of goods and services and therefore increased real income available for the people in our economy. If our recent per capita growth rate of 2½% a year continues, income per person will *double* every 28 years. More goods and services will be available for consumers, business investment, and government. But economic growth doesn't solve all of our economic problems. Despite the phenomenal productivity and growth of the U. S. economy in the past, we still have unsolved problems of poverty, inflation, hard-core unemployment, war, rapid population expansion, monopoly, pollution of the environment, and others.

Whether these problems will be solved, and when, depends on the decision-making skills and the determination that *today's youth* demonstrate in the 1970's, 1980's, and beyond.

II. TECHNOLOGY AND CHANGE

Reinforcing the series of lessons on the world of economics is an additional group describing the dynamics of technology and institutional change. This theme is emphasized in the following excerpt from the "Note to Students" that introduced the experimental MD/OAEL course.

> "We have kept two things in mind in preparing this new course. FIRST, our economy is *changing*. The changes are fundamental, the rate of change is rapid and speeding up every year, and the changes will create both *problems* and *opportunities* for Americans in the 1970's and beyond. SECOND, young people like yourselves can do a better job of preparing for the future—for full participation in the economic life of our nation—if you are given an opportunity to learn about the economy, its changing technology, and the increasing importance that *human resources* will have in the future."

Technology has been called the "life process of mankind" (by Thorstein Veblen, who was perhaps the most brilliant and creative economist that America ever produced). Certainly technology does exert a major influence on the *economy*—increasing our productivity, stimulating innovation, displacing workers, effecting changes in the economic structure — and on our *society*, including the values we live by. For these reasons, an understanding of technological progress and institutional change must occupy a central role in any course of study aimed at preparing young people to understand the world around them.

* * *

II-1. The Knowledge Explosion: Technology, Automation, and Cybernation. The application of scientific knowledge to the production of machinery and equipment, and goods and services for consumers, is one of the greatest "inventions" in the history of man. Rapidly improving technology in the mid-20th century—including *automation* (automatic operation of machinery) and *cybernation* (automation plus the electronic computer)—makes it possible to produce new goods, more goods, and better goods. Technological progress and economic change also create adjustment problems for individuals and for society.

II-2. Benefits and Burdens of Technological Change. As Figure 6 illustrates, technological advance is an important cause of productivity growth and increased Gross National Product. But technology and automation also displace

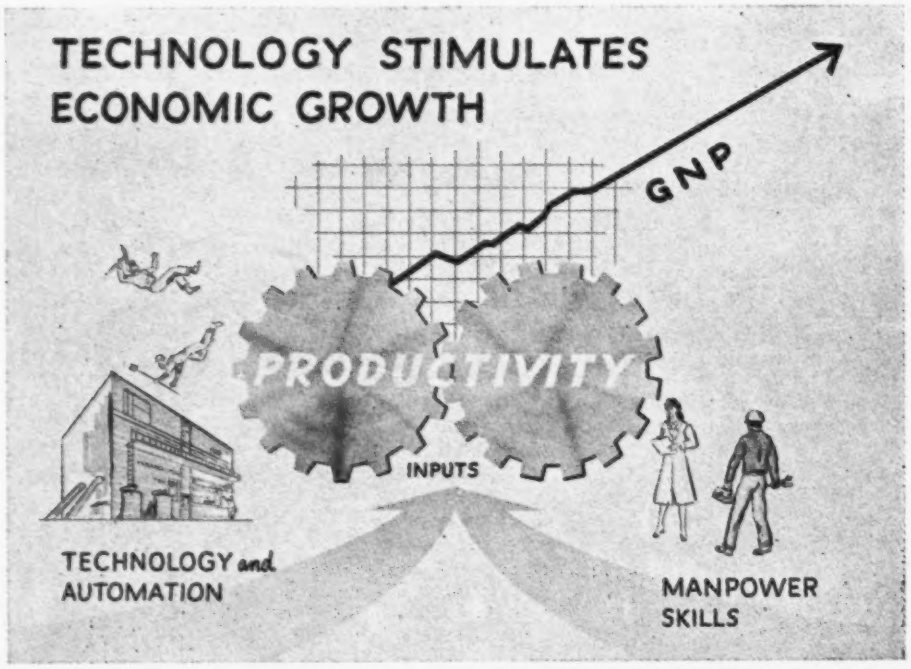


Fig. 6. Technological progress is an important source of economic growth.

some workers. In the past 20 years, nearly half of the farm work force has been eliminated by technological and economic change, and three-fourths of the coal-mining jobs have disappeared. Yet the Unemployment Rate (in mid-1968) is below 4%—the lowest level in the past 15 years. Members of the National Commission on Technology, Automation, and Economic Progress feel that technological advancement should be encouraged, but special attention should be given to solving the human problems that are created by technological change. To quote the Commission:

> "Technology has, on balance, surely been a great blessing to mankind—despite the fact that some of the benefits have been offset by costs. There should be no thought of deliberately slowing down the rate of technological advancement . . . The task for the decades ahead is to direct technology to the fulfillment of important human purposes . . . and seek to make work more meaningful rather than merely more productive."

II-3. World-view for a Changing World. Technology, economic resources, and the institutions of our society have changed a great deal in the past 50 years. We can expect the world to continue changing in the future. In order to prepare for the future—for effective participation in economic life and for successful living in a larger sense—at a minimum a person will need good health, education, and a realistic "world-view" that is oriented to the future. This *world-view* must accept the fact that many *things are changing* in the world, including our technology, resources, and institutions. The individual who can adjust effectively in a changing world is able to avoid many fears, problems, and burdens. He can also benefit more fully from the opportunities that change may offer.

III. ECONOMIC AND NONECONOMIC DIMENSIONS OF WORK

The lessons in this group demonstrate clearly that the experimental MD/OAEL manpower education course is more than a standard course in economics. (Of course, it is also *less* than a standard course in the sense that a number of topics conventionally included in a high school or college economics course, such as banking and international trade, are deliberately left out in the interests of brevity and sharpness of focus on the manpower theme.) This new course studies the institution of *Work* and its effect on the *life of man.* (See Figure 7.)

For most Americans, work is no longer a matter of making a living by the sweat of the brow. Yet even today, of all the waking hours in our adult life, fully one-third are spent on the job; and work continues to play a central role in man's life. Conditions of work have changed drastically in the past century, and even the *purposes* of work have changed. Today, men and women work to help produce goods and services; to earn an income; to satisfy certain noneconomic needs; and to develop and conserve skills (i.e., "human capital") that will not only make them more productive as workers, but also more effective as consumers, citizens, and self-fulfilled persons. By devoting attention to the third and fourth functions of work, we call into question the traditionally heavy emphasis on production and

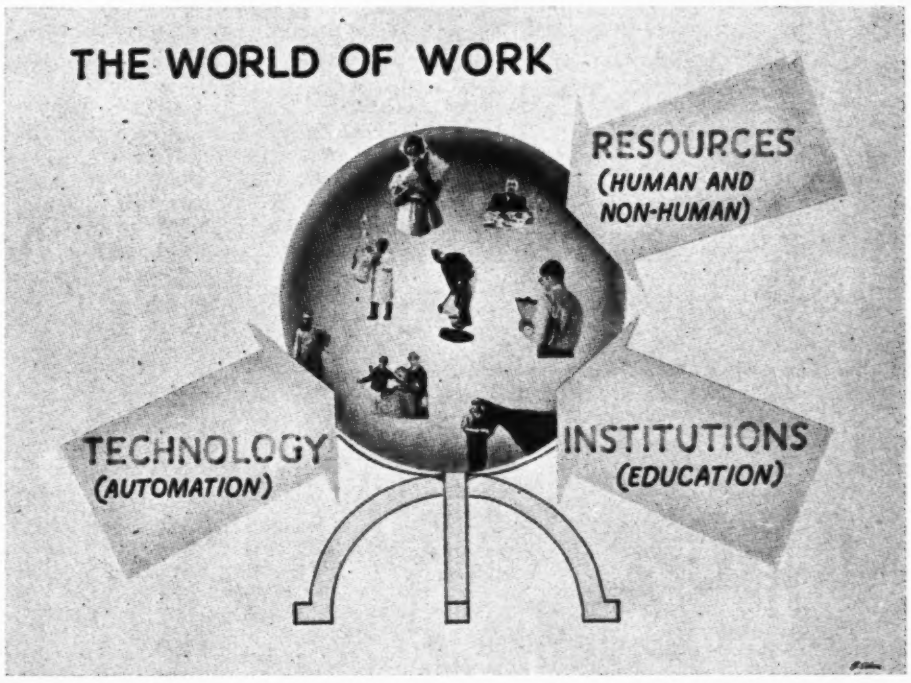


Fig. 7. The world of work is shaped by three sets of economic forces: Resources, Technology, and Institutions.

income, and invite consideration of the *quality of the work environment* and the *noneconomic values* associated with work.

* * *

III-1. Education and Work: A Means of Discovering Yourself. Education and work experiences can help young people learn more about themselves and the goals they want to achieve in life. Economic and manpower information can be useful in planning a career and in attaining personal goals. A person's chances of finding meaningful employment and building a life of purpose and fulfillment will be better if he prepares *now* for tomorrow's opportunities. (Real-life cases are used to illustrate these points.)

III-2. The Joy of Work. One of the most important rewards of work is the sense of personal fulfillment and joy that results from a job that's well done. Learning how to find personal satisfaction from work will help offset the elements of boredom, discomfort, and other negative as-

pects that every job will have to some extent. (*Note:* Specific themes are illustrated in the lesson by cartoons that suggest that work is a necessary part of life and can be a source of personal satisfaction, happiness, and fulfillment.)

III-3. The Nature and Functions of Work. Throughout history men have had many different ideas about the nature and importance of work, the job, one's occupation, and a career. Work has appeared to some people as a necessary evil, a way of making a living, or as a means of expressing oneself. The nature of work has changed through the years. Today, work has four functions in American society.

— to help produce goods and services.

— to earn income so that the worker can maintain a high standard of living.

— to fulfill some personal, non-economic needs of the individual worker.

— to develop and conserve one's skills or "human capital".

III-4. The Job: Satisfaction or Disappointment? An important question to consider in thinking about your future as an employed worker is whether you will find satisfaction in your job, or disappointment. Do the jobs that people have really satisfy their needs? How happy are workers in America? Each person has needs, desires, feelings, and talents that he brings to the job. He wants to earn money, but "Man does not live by bread alone." He has other human needs as well. Whether his needs are fulfilled—the amount of satisfaction he gets from the job—depends on the worker and on the opportunity his job gives him to express himself and achieve his goals.

III-5. The Long Arm of the Job. A job is more than a means of earning a living; it reaches out to influence a worker's total life. *What* work you do, *why* you do it, *where, how* and *with whom* you perform your job will greatly influence your whole life style. The job helps to shape personal behavior patterns, attitudes, values, and

beliefs in certain ideas. Its influence extends beyond the place of employment and length of the work day. Figure 8 illustrates how the "long arm of the job" reaches into the worker's home and family, affecting his total way of life—his ideas and ideals, attitudes and interests, manners, clothes, and even the way he speaks.

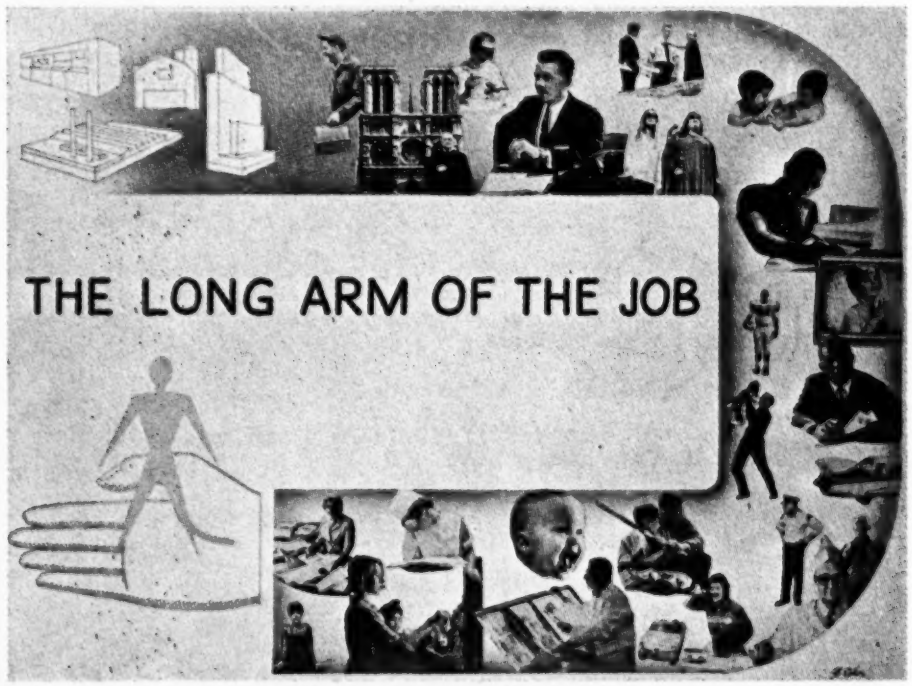


Fig. 8. The "long arm of the job" can affect a workers total way of living.

III-6. An Affair of the Heart. Work is seldom all good or all bad for the worker. Most jobs have both positive and negative sides for a worker (as in the case of the woman heart surgeon whose story is told in this lesson). If the positive values are great enough, the job can make a major contribution to the satisfactions that a worker gets from life. For example, an artist who views his work both as a way of earning a living and as an opportunity for creative expression may be well satisfied if he gets moderate rewards relative to each. Another artist, who may earn a lot of money from his commercial-art business, may be unhappy if he gets little opportunity for creative pleasure from his work. The person who plans his or her career wisely can derive greater satisfaction from *work* and from *life*.

III-7. Making Something Out of Your Job. A person's job requires him to do certain things in particular ways and therefore to some extent molds him to fit the job. But workers themselves have some control over the job. A worker may define the nature and meaning of his job through his own ideas and attitudes toward the work. Often he can make something important and personally satisfying out of his job by the way he approaches and carries out the work. (Illustrated by case studies in the lesson.)

III-8. "A Sure Sense of His Own Usefulness". At the close of his 1967 *Manpower Report,* President Johnson said that one of our most important national goals is to offer to every citizen *"a sure sense of his own usefulness."* Do all workers feel useful and get satisfaction from their jobs? Do professionals and highly skilled workers get more satisfaction from their jobs than unskilled workers, or is it the other way around? How do workers rate various factors concerning their jobs?

Research studies show that some people are more satisfied in their work situation than others. Workers in the same type of job get different kinds and amounts of satisfaction—in part because they rank their needs differently. These studies reveal, for example, that professional and technical workers feel more satisfied with their jobs, but the unskilled have fewer problems. Workers who have more of a chance to use their own skills and initiative seem to be happier about their performance on the job. And steady employment and opportunity for advancement were cited by many workers as being more important than high pay alone.

III-9. Work and Mental Health. Mental health is important to workers, their families, and their communities. What is meant by mental health? How does a person's job affect his mental health? What problems are created for workers by today's industrial society?

Good mental health is an important goal for everyone in our society. Studies by psychologists and sociologists show that a worker's mental health is influenced by his job and work situation. Just as workers enjoy better *physical health* when they have proper ventilation, heating, lighting, and safety standards on the job, they also enjoy better

mental health when the job provides them with opportunities to satisfy their needs for interesting and worthwhile work activity.

III-10. Aspiration and Achievement. "A man's reach should exceed his grasp, or what's a heaven for?" wrote the poet Robert Browning. *Aspirations* are the hopes and dreams that men and women have—the *goals* we set, what we want from life and what we strive to achieve. What are the forces that determine a person's goals and "aspiration level"? Aspirations develop and change over time. They are influenced by interests, experiences, unique personal needs, attitudes of parents and friends, and a variety of other factors. A person's idea of "success" in life depends to a great extent on his *values* and goals.

III-11. "I'm a Physical, Social, Psychological, Person!" Every individual can be looked upon as the sum total of his biological-social-psychological situation. By identifying these aspects of your makeup—and seeing how they develop over a period of time—you can gain some insights that will be valuable in choosing an occupation. For example, you can learn what particular characteristics you will bring to a job and how the various physical, social, and psychological factors will influence you both on and off the job. This will not only determine the satisfaction or disappointment your job brings but also the kind of person you are becoming.

III-12. Work: The Test Site of Human Relations. Work in our society usually involves group activity. It is very *social* in nature and will become even more so in the future. In a predominantly service-producing economy like ours, a worker's ability to get along with his employer, fellow employees, clients, or customers is extremely important. The workplace is becoming a test site for the worker's *social skills,* especially *communication* and *group relations.* Your employability in the manpower market and personal satisfaction on the job will to a large extent depend on your human relations skills.

III-13. Is There Reason and Justice in the Work Place? Unfortunately, "sweet reason," justice, and fair treatment do not always rule in the work place. Workers, supervisors,

employers—like men and women everywhere—sometimes behave in an unreasonable, unjust, and even "inexcusable" manner. As workers, we do not always think, feel, or behave rationally toward our jobs, fellow workers, or employers. Irrationality and injustice *do* exist in the work place. People who work "diligently with integrity" do not always get their rewards. The ideas, attitudes, values, and behavior of workers reflect irrational responses to the work place and the job. It is not always easy to know just what *is* rational and fair in each situation. Workers who come to their jobs knowing they will find some irrationality and injustice will be better able to deal with the situation.

III-14. Man Is More Than A Means of Production. More than a generation ago, a professor of labor economics, Sumner Slichter, wrote:

> "Man is not only the end, but also the means of production. Out of his dual capacity arises a conflict between his activities as a producer and his interests as a man—a clash between life and work."

Man is constantly making "value judgments" about what is good and what is bad—in the work place and in the larger society. *Conflicts of values* arise within ourselves, with other individuals, with groups of people, and with institutions. These conflicts exist because we all have our own values, which differ somewhat from those of other people and the institutions of our society. As a young worker you will be faced with value conflicts. Each worker must decide for himself what values he wishes to hold and what costs he is willing to bear for choosing certain values. The satisfactions which you receive from work will be closely tied to your ability to resolve value conflicts that arise in the work place. In the world of values, as in the world of economics, "there is no such thing as a free lunch".

III-15. What Price Success? The American philosopher Henry Thoreau wrote: "If a man does not keep pace with his companions, perhaps it is because he hears a different drum." Most Americans seem to believe that Success is a very important goal that's well worth striving for. But what is success? Is it Money? Power? Social status? Or something entirely different? How is success achieved?

What price do some people pay to achieve success? The answers you give to these questions may help you establish your own goals and values in life and also aid you in understanding the behavior of other people.

Although success can mean different things, many Americans identify it with money and material posessions. Financial success sometimes influences the way we look at people in our society. Yet each individual is free to decide for himself what his goals and values will be and to define success any way he chooses. The value system and concept of success you accept will have an important effect on your whole life.

IV. RATIONAL DECISIONMAKING AND CAREER PLANNING

This group contains a somewhat diverse collection of lessons. Personal development, the role of women in the labor force, and the subject of value judgments are all included. Some special problems and value conflicts of working women are treated in case studies. The basic rationale for this broad theme is that students can benefit from practical exercise in using facts and systematic analysis to make rational decisions. Earlier, we described the Five Steps in Economic Reasoning—Define the problem, Identify goals, Consider alternatives, Analyze probable consequences, Choose best course of action—and suggested how they can be applied to *personal* economic decisions as well as to *public* policy issues. However, it is one thing to "learn about" rational decisionmaking, and something quite different to possess skill in applying the five steps in economic reasoning to a concrete problem. That comes only with practice and experience in *doing*. Opportunities to practice decisionmaking skills are provided in two of the lessons in this group.

If students acquire skill in basing judgments on reason and fact—using the analytical tools of History, Statistics, and Theory—they will be better able to resist the temptation and avoid the habit of "assuming conclusions" and "enjoying the luxury of opinions without the effort of thought". (*Note:* Several lessons described earlier also contribute directly to the educational objectives of the decisionmaking and planning theme, e.g., I-13 and II-3 above.)

IV-1. The Formula: Aspirations + Ability + Action = Achievement. Many people seem to have a kind of "instinct of workmanship" that makes them actively try to achieve a goal. Successful people in our society have for the most part followed something like a four-step "Formula for Achievement". They have combined *Aspirations, Abilities,* and *Action* for *Achievement.* There are many opportunities to apply the formula for achievement in American economic life—by investing in your own "human capital" and acquiring the skills needed for intelligent decisionmaking as a worker, consumer, and citizen. Full equality of opportunity, however, does not exist in America (or anywhere else in the world). Social, economic, and personal obstacles to achievement continue to exist, even in our relatively open society.

IV-2. "Who Am I? What Am I Becoming?" A person's work experience and attitudes will have an important influence on forming his identity—determining the kind of person he is and the place he makes for himself in society. Individuals go through various stages of development relative to work and personal fulfillment. To know ourselves and what we want from life, both personally and vocationally, is a life-long process of searching and learning. We need to reexamine ourselves and our goals periodically since new experiences play a big part in *changing* who we are.

IV-3. Housewife or Career Girl? A kind of "revolution" has occurred in the pattern of women's lives in America. In order to understand and prepare herself for this revolution, a girl needs to consider that during her life she will probably be both a housewife *and* an employed worker —often at the same time. The old way of thinking of women as either Housewives *or* Career Girls is now largely obsolete. More and more women are *combining* both these roles at the same time at different periods of their lives. The personal, social, and economic lives of everyone in our society—including men—will be influenced by this dual role of "the new American woman".

If the girls of today are going to realize their fullest potential both as homemakers and employed workers, they will have to look closely at themselves and the changing world about them. They will have to think seriously about

what they want from life. Information about the changing patterns of women's lives, both in and out of the manpower market, can help girls make the decisions today that will increase their chances for a meaningful life tomorrow.

IV-4. ". . . But Women's Work Is Never Done". Women do much of the work in our society. Not only are they responsible for day-to-day management of the great majority of American homes and caring for their families, but millions of women—29 million, or 36% of our total labor force in mid-1968—are also entering the manpower market and accepting employment outside the home. Women work in the homes, factories, offices, laboratories, and classrooms of our society. Women are providing an increasing share of the human resources that are the key to our economic productiveness. In fact, nine out of every ten girls today will be gainfully employed at some time in their lives.

IV-5. First the Plan, Then the Job! Choosing an occupation is one of the most important decisions that a person will make during his life. It can help to approach this decision in a rational and systematic fashion. By analyzing *yourself* and studying the *employment opportunities* available, you should be able to increase your chances of finding a job that will meet your particular needs and provide personal satisfaction and rewards. It may also result in greater productivity and an increased contribution to the nation's total output of goods and services. The margin of error that existed in the past for young people who failed to plan their occupational future is rapidly disappearing. In today's high-skill economy those who *plan* for their future are more likely to have a *better* future.

IV-6. An Exercise in Economic Reasoning. The steps in economic reasoning can be applied to a variety of economic decisions, including the choice of a career. These five steps are valuable tools for analyzing yourself and the opportunities that exist for you in the manpower market. The *problem* to be defined is the choice of a career. Personal *goals*—such as high income, outdoor work, social status—will vary among individuals, according to their own value systems. There are many *alternative* occupations

that can offer the opportunities a worker may be seeking. Some of the *consequences* of choosing a particular occupation—financial and nonfinancial rewards of employment, for example—have been identified. Occupational choice and earnings are different for those who come to the manpower market with a good education and those who don't. Your chances of successful participation in the manpower market will be improved if you make some tentative occupational *choices* early and begin planning and taking action aimed at reaching your occupational goals.

IV-7. Value Judgments: Is It Possible to Know What's Good? "Values" are standards that people use to make choices and decisions about important matters. A value implies *goodness* or *badness*. We make *value judgments* every day, and our lives are influenced a great deal by the values we hold and use. We acquire our values from parents, church, community, and other sources. We may also be able to learn useful values through careful reasoning and a factual study of man and his social and physical world.

Values play an important role in the selection of *economic goals*. A rational anlaysis of values requires that you keep an open mind, clarify the issues, verify the facts, follow the rules of logic and consistency, and apply your values to the *methods* used in achieving your goals as well as to the selection of the *goals* themselves.

V. THE MANPOWER MARKET

Labor force data and the concepts of manpower demand and supply are emphasized in this group of lessons, which present an assortment of theoretical and statistical material as well as some practical, how-to-do-it information. The basic objective of the nine new lessons in this group is to give a meaningful picture of the manpower market as an elaborate, many-sided social institution—complete with supply and demand forces, employers, labor unions, the federal-state employment service, and jobless workers.

V-1. The Manpower Market: Men and Jobs. The manpower market is the meeting of men and jobs—the institutions, processes, and policies through which employers obtain the human resources they need to produce our economy's goods and services and through which men and women find employment. By participating in the manpower market, workers have an opportunity to make a contribution to the economy's output, to earn an income, to satisfy other human needs, and to conserve and improve their skills. As Figure 9 illustrates, effective participation on the *supply* side of the manpower market depends upon the skills that workers have acquired through education and training and the attitudes and values that influence their response to changes in the manpower market. The manpower requirements of employers on the *demand* side of the manpower market are influenced by the growth of the overall economy and the needs of their particular enter-

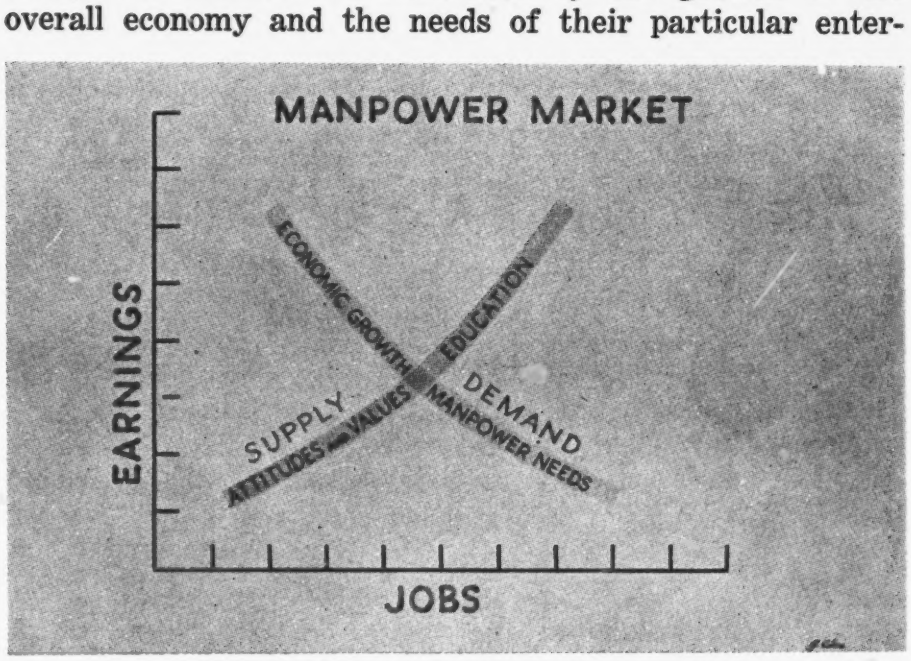


Fig. 9. Supply and Demand forces interact in the Manpower Market to determine employment and earnings.

prise. Supply and demand factors interacting in the manpower market determine employment and earnings in the economy.

V-2. Measuring the Manpower Market. In order to understand the manpower market and be able to evaluate its performance, it is necessary to use concepts which cor-

respond to *facts* in the real world that can be measured. The *labor force* is the concept which economists have developed to measure the manpower potential of the economy. Two additional concepts—*employment* and *unemployment* are used to measure the status of the labor force and evaluate the performance of the manpower market. These concepts are used by agencies of state and federal government —such as the U.S. Bureau of Labor Statistics—for gathering and publishing statistics on the functioning of the manpower market. Labor force and employment data are essential for those who want to understand how our nation's human resources are being used.

V-3. The Changing Manpower Market. The labor force is the supply of workers who are already employed or are able and willing to accept employment. It is from this group that employers choose their workers. The labor force keeps changing, in size and composition. Our labor force is growing rapidly, in part because of the increasing number of *young workers* and *women* who are entering the labor force. Between now and 1980, our economy will have to grow at a rapid rate if we are to find jobs for present and new members of the labor force. Competition for jobs will probably be keen during the 1970's, and emp'oyers will tend to hire those who have the best education and training.

V-4. What Do Employers Expect From Their Workers? To get and hold a job, a worker has to meet certain requirements set by his employer. These include not only particular *skills*, but also *personal qualities* and *attitudes* that the employer believes the worker must have to be successful on the job. A knowledge of what employers expect from their employees will be useful to a young worker in getting a job and being successful in his work.

V-5. How Do I Find a Job? There are many different ways of finding a job. Often you can get information and help from relatives or friends. You might go directly to an employer and apply for a job. You can read newspaper want ads, check with private employment agencies, labor unions, the public employment service (in all 50 states), or simply depend on luck. The Public Employment Service—a government program operated by the state, with help from the

federal government—offers many valuable services to young workers in addition to actual job placement. Knowledge of the various sources of information and assistance in finding employment can be very useful to you when you enter the manpower market. (In Ohio, the name of the agency that provides this type of assistance is the Ohio State Employment Service, with local offices throughout the state.)

V-6. Collective Bargaining. Collective bargaining is the basic means used by labor unions and employers to arrange the terms and conditions of employment for workers in "organized" manpower markets. Collective bargaining typically involves the negotiation of a *contract* listing such details as rates of pay for workers and including a *grievance procedure* for carrying out and enforcing the contract. Knowing how labor and management work together in a system of "industrial law and justice" will help you develop a better understanding of the modern manpower market.

V-7. Portrait of the Unemployed. There are many *unemployed* workers in the U. S. economy (more than three million in mid-1968). What are the personal *characteristics* of these unemployed workers? Are they men or women? Young or old? White or nonwhite? Skilled or unskilled? High school graduates or dropouts? Information about the unemployed may be of general interest to you as a citizen and also prove useful in making personal career decisions.

Although the total number of unemployed workers varies greatly from year to year, the jobless tend to be the *uneducated,* the *unskilled,* and those who are *discriminated against.* (Often the same people are included in all of these categories.) The uneducated lack the primary communication, computation, and other skills to obtain employment. The unskilled lack the know-how and work experience required by a changing technology. Others are discriminated against because of their age, color, or sex. Increased *investment in human resources* and more equal *opportunities* in the manpower market can help improve the employability and earnings of men and women having these "high-risk" characteristics.

V-8. Men and Women Without Jobs. The total demand for labor and the total supply of labor are never exactly equal, and the supply and demand for specific *types* of workers never are in perfect balance. In the giant U. S. economy there are always some unemployed men and women in the labor force. Unemployment wastes the productive capacity of part of our labor force; it means that manpower is available but isn't being used in production. *Frictional* and *seasonal* factors account for a fairly stable amount of unemployment in our economy (perhaps 3% of the labor force). *Cyclical* unemployment—which averaged nearly 20% of the labor force during the Great Depression of the 1930's—is caused by insufficient market demand (spending) in the economy. *Structural* unemployment is caused by fundamental changes in the economy that affect supply and demand in the manpower market. In general, cyclical and structural unemployment vary the most over the years and are the most serious kinds of unemployment because they last longer than frictional or seasonal.

V-9. Help for the Unemployed. During the early 1960's the number of unemployed workers in the American economy averaged about 4,000,000 each year. What policies and programs have been adopted by business firms, labor unions, and federal-state-local governments to deal with the problem of unemployment?

Government programs to deal with general and specific types of unemployment include: increasing the total number of jobs available throughout the economy (by using fiscal policy to increase total demand for goods and services when total spending would otherwise not be adequate); creating new job opportunities in particular areas; training and retraining the unemployed; supplying information on job openings; and providing unemployed workers with temporary income through Unemployment Insurance benefits while they look for a job. *Private* programs are designed to deal with unemployment caused by the operation of specific business firms and industries. These include such plans as supplementary unemployment benefits (SUB), severance pay, retraining programs, and early pensions. Knowledge of these programs can help you as a citizen and a worker to understand what our society does to cope with the problems of unemployment.

VI. OCCUPATIONAL OPPORTUNITIES IN THE U. S. ECONOMY

What are the consequences of technological progress and economic growth in terms of the kinds of jobs men and women have? The present and future structure of employment, by occupation and by industry—as well as by geographic location—will largely determine the pattern of job opportunities for men and women participating in the labor force in the 1970's and beyond. The structure of jobs also will indicate the kinds of skills that workers need and therefore the type and amount of education and training—investment in "human capital"—that will be required. Information of this type has implications for career planning and for public policy in the manpower field.

* * *

VI-1. The Work That People Do. The division of labor is carried so far in the American economy that workers today are employed on almost every type of job you can possibly think of—from electrician, cardiovascular pharmacologist, and United States Senator, to go-go dancer and truck driver. The United States Department of Labor has classified and described 36,000 jobs and nearly 500 separate occupational groups. These jobs differ a great deal in terms of employment qualifications, pay, hours, working conditions, and the opportunities they provide for helping to produce our economy's goods and services.

VI-2. Are Today's Skills Good Enough for Tomorrow's Jobs? In the dynamic economy of the United States, change is always taking place in the number and nature of jobs available in the manpower market. Technology and other forces cause some old jobs to disappear while creating new jobs. The changes that will take place in the manpower market during your lifetime will mean that many of today's specific occupational skills will not be good enough for tomorrow's jobs. Each man and woman entering the manpower market in the 1970's can expect to have three, four, or even more *entirely different* types of jobs during his productive lifetime. Only through continuing education and training can workers expect to keep their manpower skills up to date.

VI-3. Finding the Trees in the Employment Forest. The manpower market in the United States involves the activities of 80 million workers, employed in thousands of different occupations and industries. To start planning your career and preparing for employment, it will be helpful to find a way of examining the many different types of jobs that exist in the economy. One approach is to classify jobs on the basis of *occupational* and *industrial* groups. Currently, more Americans are employed in *White-collar* occupations—44%—than in any other occupational group. *Blue-collar* occupations employ 37% of our labor force; 13% are *Service Workers;* and 6% are *Farm Workers.* Looking at employment by broad industrial classification, we find that 60% of our workers are employed in the *service-producing* industries, while 40% of our workers are producing *goods.*

VI-4. On Top in the Service-Producing Era. There are more *white-collar* workers employed in the U. S. economy than any other group of workers. These white-collar workers are employed in Professional and Technical jobs; Managerial; Clerical; and Sales occupations. White-collar workers play an especially important role in the production of services as opposed to goods. In such white-collar occupations as office work and retail selling *women* play a very important role.

VI-5. Farm, Blue-Collar, and Service Workers. Farm workers provide us with the food and fiber necessary for our health and comfort, indeed for our very survival. However, Blue-collar and Service workers also provide our economy with essential goods and services. More than one-half of all workers in the U. S. are employed in Farm, Blue-collar, or Service occupations. These workers play important roles in our economy—feeding us, producing our manufactured goods, and serving our personal and protective needs.

VI-6. They Get the Work Done in American Industry. The 80 million workers in our economy are employed in thousands of different occupations and industries that are classified into 11 occupational groups and nine industrial groups. By using these classifications we can study present and future conditions in the manpower market. Currently

nearly half of our employed labor force works in *White-collar* occupations. *Blue-collar* workers account for about one-third of total employment. One-sixth of our work force is employed as *Service* workers; and *Farm* workers represent one-thirteenth of total employment. Six out of every ten employed workers in the economy are found in the *service-producing* industries, which are the primary source of white-collar employment. The *goods-producing* industries provide the majority of job opportunities for blue-collar workers.

VI-7. Occupational Needs in the 1970's. White-collar and service-worker occupations will have the fastest rate of growth in employment in the decade from the middle 1960's to the middle 1970's. Employment in *blue-collar* occupations, while growing in number, will nevertheless represent a smaller share of the total employment picture in the 1970's than now. The number of *farm* workers will continue to decline. This projection of a continuing shift in the occupational basis of employment in our economy has important implications for career planning.

VI-8. Employment by Industry: Projections for 1975. The sources of employment in 1975, by *industry,* will be somewhat different from those of the 1960's. We are becoming increasingly a nation of *service-producers.* By 1975, two out of every three workers in the American economy will be employed in the service-producing industries. Industries in which employment will increase more than average are: State and Local Government, Services, Contract Construction, and Wholesale and Retail Trade. The absolute number of jobs in Farming and in Mining will decline. However, in 1975 one-fourth of all workers will still be employed in the biggest industrial group in the U. S., *manufacturing,* which is a goods-producing industry. Changes in the industrial sources of employment in the 1970's have important implications for career planning, because they point out the types of jobs that will be available in the near future.

VI-9. Where the Jobs Are. Individual workers must adjust not only to industrial and occupational changes in the employment situation, but also to changes in the *geo-*

graphic locations where jobs are available. Information on the geography of changes in employment opportunities can assist you in occupational planning by suggesting where the jobs of tomorrow are most likely to be located.

We are a nation on the move. Forty million Americans change their place of residence every year, with the better educated and the professional and managerial workers moving more often than other groups of job holders. The most important reason why people move is *economic opportunity,* including the search for a job, or a better job. The geography of employment opportunities has shifted greatly in the past 20 years and will continue to change.

VI-10. A Case Study: Where the Jobs Are in Ohio. The occupational and industrial composition of employment in Ohio in the 1970's will be different than it was in the 1950's. The trend is toward more job opportunities in the *white-collar* and *service-worker* occupational groups and in the *service-producing industries,* with relative declines in mining, agriculture, and manufacturing. However, in 1970 four out of every ten workers will still be employed in blue-collar occupations; and the *manufacturing* industries will still be the single most important industrial source of jobs in 1970. This case study of Ohio illustrates the types of changes that are taking place in manpower markets in many of our states and can be useful to young people planning to enter the manpower market in the next decade.

VI-11. Employment—From the Roaring '20s to the Shifting '60s. The past 40 to 50 years have seen vast economic changes in our economy, including changes in the number of Americans employed in various occupations and industries. *In 1920* we were mainly a nation of *blue-collar* and *farm* workers. Today a majority of American workers have white-collar and service jobs. These trends in employment reflect technological changes and the growth and decline that have taken place in different industries in our economy. Whereas the goods-producing industries provided most of the jobs in the 1920's, we *now* find a majority of workers producing *services.* These trends in employment affect the opportunities that workers will have in our changing manpower market in the future.

VII. MANPOWER SKILLS AND THE ECONOMIC VALUE OF EDUCATION

The eight lessons in this final group have both *educational* value—from the viewpoint of the general citizen as well as labor force participants—and also *motivational* value. By describing schooling as an "investment in human capital", students are able to see that their current, day-to-day school activities are more than simply "meeting requirements" and "getting an education". They can appreciate, as Figure 10 depicts, that the process of education helps them to develop useful *manpower skills* that will have value in the manpower market. Looking at the process

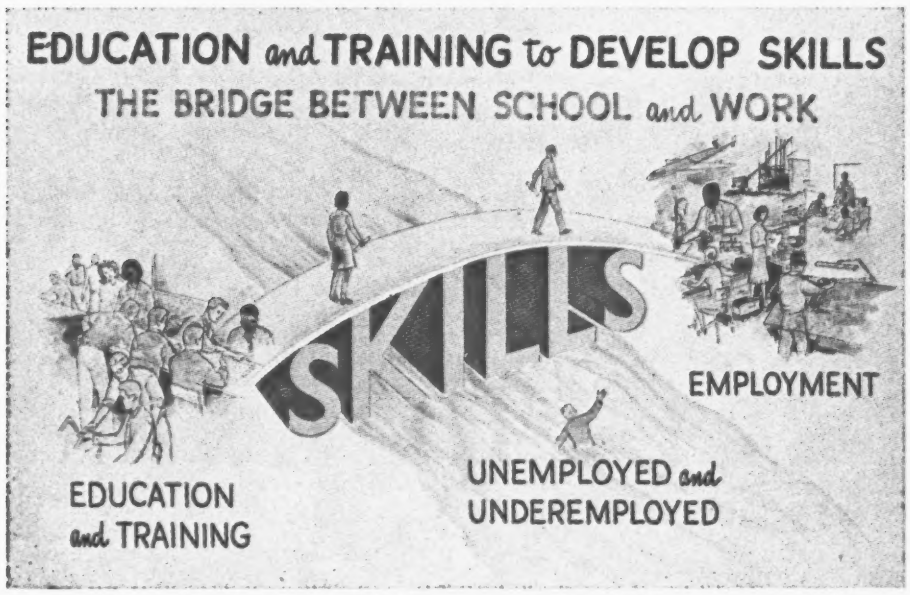


Fig. 10. Education and training help young people develop manpower skills that provide a bridge between school and work.

of education from an economic viewpoint enables one to recognize many of the benefits and costs of education, i.e., the *output* not only of consumer-type benefits but also "human capital", and the *input* of necessary productive resources. Analyzing the *economic* aspects of education is not meant to detract from the *noneconomic* values associated with education; it merely adds another dimension to the full appreciation of what social scientist Kenneth E. Boulding (President of the American Economic Association) terms "the knowledge industry", which he feels is the key to social evolution.

VII-1. Skills for Your Skill Bank. In order to participate successfully in the economic life of our society as workers and income-earners, men and women must have MANPOWER SKILLS—*the ability to use knowledge effectively on the job.* One of the most important facts of American economic life in the second half of the 20th century is that you "can't get tomorrow's jobs with yesterday's skills." More skills and new kinds of skills are needed in our constantly changing Human Resources economy. Skills that are basic, durable, versatile, transferable, and open-ended will prove most valuable for a worker's personal "skill bank". Four basic groups of manpower skills that have high economic value are: *Communication, Computation, Manual Dexterity,* and *Group Organization.* These skills are acquired through education, training, and work experience.

VII-2. Will It Take A Good Education to Get Tomorrow's Jobs? The men and women in our labor force increasingly are better educated. Today, the *average* (median) *worker* in our economy is a *high school graduate.* The increase that has been taking place in years of schooling completed by our labor force will continue. Employment experts have suggested that "to enter the job market without at least a high school diploma is now economic suicide."

VII-3. How Can You Get the Skills Needed for Tomorrow's Jobs. Most of tomorrow's jobs will require *more* skills and *different* skills than jobs required in the past. In order to acquire special skills, men and women can enroll in a variety of different educational and training programs available throughout the country. These include: high school vocational educational programs (some of which involve actual work experience); colleges and universities, public and private technical schools, business schools; on-the-job training; apprenticeship training in many skilled trades; MDTA, Job Corps, and other government-sponsored training programs. Regardless of what occupation you are interested in, there usually will be a variety of education and training programs you can enroll in to obtain the skills needed to qualify for employment.

VII-4. Education: An Investment in Human Resources. One of the most important economic discoveries of the 1960's is that education and other forms of "investment in human capital" provide vast benefits to the economy as a whole and to individual workers, as illustrated in Figure 11. Research has shown that human resources can be made more productive by "investing" in a worker's knowledge and skills—sometimes called his "human capital"—in the same way that the economy gains from investments in non-human capital such as machines, buildings, and equipment.

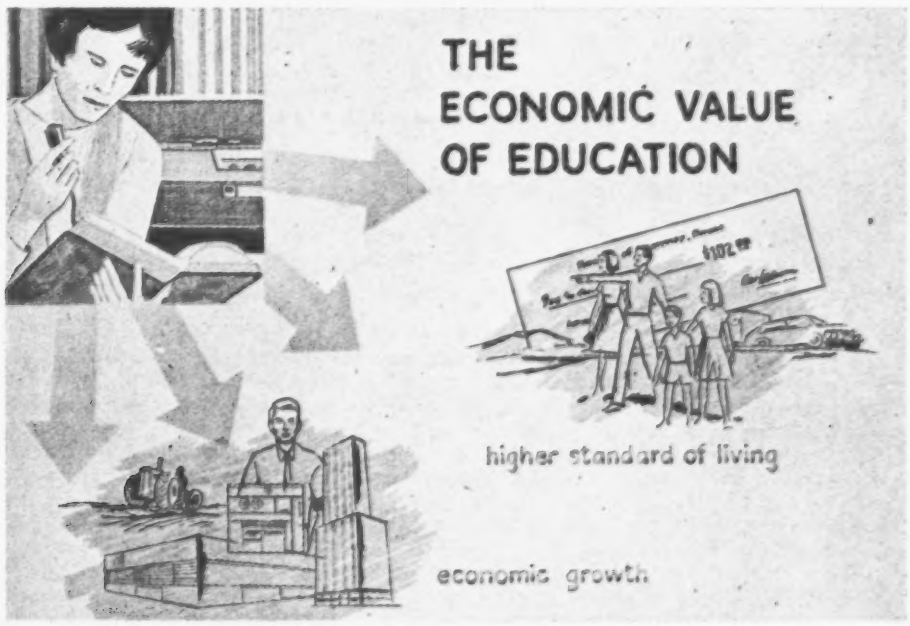


Fig. 11. Education "pays off" to the individual worker and to the economic system as a whole.

Economists have estimated that one-fourth of our recent national *economic growth* is the direct result of improved education of the work force. Statistics also show that workers with more education receive higher *earnings* than workers having less education. *Rates of return* on investment in education are estimated to be higher than average rates of return on many investments in nonhuman capital.

VII-5. "What's In It for Me?" Workers who are successful in the manpower market get both economic and non-economic rewards. The economic or financial rewards depend on the qualifications of *the worker* himself, the *supply and demand* for particular kinds of workers, and on

institutional factors such as minimum wage laws and collective bargaining agreements between employees and labor unions. Statistics show that male workers with more schooling on the average enjoy higher employment rates, get better paying jobs, and have higher earnings than workers with less schooling. The estimated lifetime earnings of a high school graduate *exceed* the earnings of a high school dropout by $35,000.

VII-6. Education's Payoff. Investments made in human resources result in benefits or "payoffs" that can be measured in dollar amounts. *Education* is one of the most important forms of investment in people. The cash value of a high school education on the average is $1,370 a year *greater* than the value of an elementary school education. A college education on the average pays off at the rate of $3,000 *per year* in extra earnings above what a high school graduate receives. Education offers a possible way out of poverty, deprivation, and dependency for children growing up in low-income families. It also provides many benefits, both economic and noneconomic, to society as a whole.

VII-7. Financing Education. Education is an investment in human resources that yields *benefits* and also involves financial *costs*. In 1967, the American people spent $50 billion for education, more than 6% of our Gross National Product. Three-fourths of the costs of education are paid through *government* budgets, financed in part through property taxes collected by local school districts. *Local* governments spend more money for education than the states or federal government; and spending for schools is by far the largest item in the budgets of local governments in the United States. Citizens can make more intelligent decisions about elementary, secondary, and higher education when they know how education is financed and what costs and benefits are involved.

VII-8. The Benefits and Costs of Education. Professor Eli Ginzberg, an economist who specializes in the study of human resources, has written: "An affluent democratic society can grow from strength to strength if it has the wisdom and the courage to invest in the development of its people."

Education provides *economic benefits* to the individual and to the economy as a whole, and also provides certain *noneconomic benefits* to the individual and society.

These benefits include increased earnings for the *individual* worker and consumer-type benefits related to his personal development and satisfaction. *Social benefits* that spill over from the individual and are enjoyed by the community as a whole include increases in Gross National Product, advances in knowledge, better-informed and more responsible citizens, and less anti-social behavior such as crime. Costs are involved in all educational activity because the educational process involves the uses of productive resources (manpower, capital, and natural resources). Monetary costs include direct tax costs, indirect costs of foregone earnings, and individual expenses. There may also be certain psychic and social costs, such as personal discomfort or sacrifice and diseconomies of overcrowded schools. Many estimates of the rates of return on investment in education are understated because they fail to include individual consumer-type benefits and social benefits.

THREE

Preliminary Evaluation of the MD/OAEL Project

The immediate objective of the MD/OAEL project was to develop and field-test an instructional program for use in junior and senior high schools that would help young people prepare for the changing world of work and for successful participation in American economic life. Elsewhere (see *Final Report on the MD/OAEL Project*, U. S. Office of Education, July 1968) we have listed a total of seven specific objectives of the project:

1) To identify *appropriate content* for a junior or senior high school course aimed at bridging the gap between school and work;

2) To determine the feasibility of introducing a separate course in manpower/economic education into the *school curriculum,* and at what grade level and under what teacher-subject aegis;

3) To write a set of *instructional materials* or self-contained course incorporating the appropriate information and concepts in a form suitable for experimental use in the schools;

4) To develop valid and reliable *evaluation instruments and procedures* to test the pre-treatment and post-treatment understanding, attitudes, and behavior of students with respect to manpower and economic concerns;

5) To *field-test* the instructional materials and evaluation procedures in a number of schools;

6) To analyze the results of field-testing and *evaluate* the outcomes;

7) To *disseminate* the experimental findings and the instructional and evaluation materials to the educational community at large in order to encourage additional experimentation, use, and improvement of the program.

The course content has been identified, and was summarized in the preceding section of this publication. Feasibility of introducing the instructional program into the school curriculum as a separate course was demonstrated by the actual teaching of a one-semester course ("Manpower Development: Opportunities in American Economic Life") in eight schools in Lancaster, Zanesville, and Columbus, Ohio, during the Fall semester of the 1967-68 school year. (A number of schools in Ohio, Arkansas, Virginia, and elsewhere have indicated that they will offer the course as a regular part of their curriculum beginning in September, 1968). **Although the course was field-tested with students in the eighth, ninth, and tenth grades, the authors believe that it is also appropriate for seventh, eleventh, and twelfth grades and for adult education, including such special groups as Job Corps and MDTA trainees.** The full set of instructional materials was written, reproduced by mimeograph for experimental use, and subsequently (April 1968) revised and published for controlled dissemination. The text, *Manpower & Economic Education: Opportunities in American Economic Life* — along with a companion *Teacher Manual* — is now available from the Joint Council on Economic Education, 1212 Avenue of the Americas, New York 10036.

Two formal evaluation instruments — a 40-item, multiple choice "Manpower Economics Test of Understanding" and 62-item, agree-disagree "Survey of Manpower & Economic Attitudes" — were constructed for use in the project. The course was field-tested and evaluation instruments

administered, pre and post, to students enrolled in the course and also to control groups. The results were analyzed and the instructional materials and preliminary evaluation findings are now being disseminated to the educational community and the general public by a variety of means, including the publication of this summary report.

* * *

It is our belief that an effective program of manpower education should accomplish three things. It should enhance the manpower *understanding* of students who receive the instruction. It should have some impact on their *attitudes*, opinions, and values. And finally, we believe that an effective program of manpower education — and economic education in general — ought to make a difference in the *behavior* of the people who are exposed to the course. That is, people who possess "manpower understanding" presumably should think, feel, and act differently than people who do not have such understanding. Indeed, any education program that does not produce significant effects on the would-be-learners in terms of their understanding, attitudes, and behavior, may open to challenge in terms of the efficiency of the enterprise. When resources are invested in education, it seems appropriate that questions be raised about the effectiveness of the program and the value of the outcomes, including the existing school curriculum.

In the following paragraphs, and in Appendices A and B, evaluation data are presented in summary form based on classroom experience of the 750 students and eight teachers who participated in preliminary field-testing of the MD/OAEL course during the Fall semester, 1967-68, along with comparative test scores of nearly 700 additional students who served in control groups.

As Table 1 in Appendix A indicates, the eighth-grade students who were enrolled in the course improved their performance on the 40-item "Manpower Economics Test of Understanding" (METU) from a pre-test mean score of 14.9 to a post-test mean score of 20.8, for a gain of 39.6%. Since the eighth-grade *control* students increased their mean score by 6.2%, from 14.4 to 15.3, during the semester (even though they did not receive instruction in manpower edu-

cation), the *net* percentage change for the eighth-grade *instructional* group was 33.4%. Table 2 provides details for the six schools that had eighth graders enrolled in the course. Table 3 summarizes the t-test analysis used to determine the statistical significance of the differences in mean scores. Differences in post-test mean scores, between the instructional and control groups were significant at the .01 level, as were the gain scores.

We interpret these test results as indicating that the experimental MD/OAEL course *did* make a significant difference in the *understanding* of students exposed to the instruction. (Tests administered to the ninth and tenth graders did not yield significant results, because the populations were too small and satisfactory controls could not be established.)

With respect to the effect that the experimental course had on student *attitudes,* it was found that eighth graders in the instructional group significantly *changed* their responses on 21 statements out of the 62 included in the "Survey of Manpower & Economic Attitudes" (see Appendix B), while students in the control group changed their responses on only 11 statements (data for control students are not provided in this publication). In other words, students in the instructional group changed their attitudes concerning manpower and economic matters in 33.9% of the cases, whereas control students changed their attitudes in only 17.7%. No attempt was made to define "good" or "bad" attitudes, the purposes being simply to determine what opinions the students held and whether these opinions were changed on a substantial number of statements between the start and completion of the experimental course.

Although some short-run *behavior* changes among students were reported by teachers, guidance counselors, principals, and other school personnel — such as more active participation in class discussion and greater interest in reading about occupations — not much can be reported in the way of solid findings. It is our intention, however, to make use of personal data records compiled for all 1400 instructional and control students to conduct a longitudinal study of the program's effectiveness in terms of the students' future education, training, employment, earnings, and work-satisfaction.

In the case of the 55 tenth-grade students (designated as "underachievers and potential dropouts"), the project directors were informed that a dropout rate of 30-40% had been anticipated for this group at the beginning of the school year. When the year ended in June 1968, the school guidance director reported that only three students (5.4%) in the special group had actually dropped out. Both the teacher and guidance counselor stated that the MD/OAEL course was a major factor in keeping their students in school.

One final note on the preliminary evaluation of the course. Students were asked at the end of the semester to complete a three-page questionnaire evaluating their experience with the course. The consensus of all the students — eighth, ninth, and tenth graders — was that the course was *exceptionally valuable* in terms of their future decisions and actions, and compared to other courses they had taken, they felt they *learned a great deal.* They judged the course to be *above* average in *interest,* and *below* average in *difficulty.* Overall, the eighth graders gave the course a rating of 2.5 on a scale of 0-1-2-3-4, with three and one-half times as many "outstanding" and "above average" ratings as "below average" and "poor". Ratings by the ninth and tenth graders were considerably *higher.* More detailed information on the evaluation of the course may be found in the "Final Report on the MD/OAEL Project."

* * *

Addendum: Educators and others interested in manpower and economic education are referred to Appendix C, which contains an annotated bibliography of books, documents, pamphlets, and other materials used in the preparation of the experimental course and in the orientation and training of teachers who participated in the preliminary classrom testing of the program.

APPENDIX A

"MANPOWER ECONOMICS TEST OF UNDERSTANDING": TABULATION OF RESULTS

The three tables that follow provide a means of evaluating student understanding of the MD/OAEL course materials by comparing the pre and post scores that the instructional and control groups made on the 40-item multiple-choice "Manpower Economics: Test of Understanding". This test had a possible score of 40 points (one point for each correct answer). The same test form was used for both the pre-testing in September 1967 and the post-testing in January 1968.

The test is considered a reliable instrument for measuring student understanding of the course material since it produced an index of .835 using the Kuder-Richardson formula No. 20 and .806 with the K-R formula No. 21. (Specialists in testing and measurement consider that an index of .80 and above on the Kuder-Richardson test of reliability indicates a highly reliable examination.)

Table 1 compares the students' scores and their distribution for the pre- and post-testing of both the instructional and control groups for the total number of eighth, ninth, and tenth graders involved in the MD/OAEL project. *Table 2* presents a detailed breakdown for the eighth grade (two school systems and six individual schools) of the information contained in Table 1. *Table 3* shows the findings from a test of significance done on the post-test scores of the eighth graders. A summary of the pre- and post-test performance of *all* the students who were involved in the MD/OAEL course is provided in Table 1. It gives an overview while Table 2 and 3 examine the eighth graders test results in more detail. The two "N" columns in Table 1 show the number of students who took the "Manpower Economics Test of Understanding". The "Percentage Change" column is a figure which is obtained by subtracting the pre-test score from the post-test score and dividing the remainder by the pre-test score. It shows "improvement" as a percentage of the pre-test score.

The "Net Percentage Change" column indicates the improvement of the instructional group minus the improvement of the corresponding control group. This figure can be considered a "net improvement factor". (Because the number of 10th graders who actually took both the pre- and post-tests was so small, their "Net Percentage Change" is not shown.) The "Standard Deviation" columns present the dispersion or variance of the scores on the tests. The smaller the standard deviation figure the closer the scores are grouped around the mean. On post-tests, the standard deviation would normally be greater because of differences in the amount that particular students have learned during the instructional period.

Table 1. METU TEST SCORES IN MD/OAEL COURSE

TEST GROUP	MEAN SCORE PRE-TEST	N=	MEAN SCORE POST-TEST	N=	PERCENTAGE CHANGE	NET PERCENTAGE CHANGE	STANDARD DEVIATION	
							Pre-test	Post-test
8th Grade Control	14.4	551	15.3	527	+ 6.2%	-------	4.58	4.79
8th Grade Instructional	14.9	605	20.8	576	+ 39.6%	*+ 33.4%*	4.78	6.83
9th Grade Control	14.4	75	16.8	72	+ 16.7%	-------	4.06	4.51
9th Grade Instructional	16.0	90	18.8	80	+ 17.5%	*+ .8%*	3.84	6.34
10th Grade Control	12.7	36	14.8	26	+ 16.5%	-------	3.65	4.64
10th Grade Instructional	12.5	54	16.8	42	+ 34.4%	-------	3.66	4.40

Table 3. ANALYSIS OF PRE-TEST MEANS, POST-TEST MEANS, AND GAIN SCORES OF EIGHTH-GRADE STUDENTS (t-TESTS)
"Manpower Economics Test of Understanding" (METU)

SCHOOLS	PRE-TEST MEAN SCORES		DIFFERENCE IN MEAN SCORES (D=X-Y)		POST-TEST MEAN SCORES		DIFFERENCE IN MEAN SCORES (D=X-Y)		POST-TEST GAIN SCORES*		DIFFERENCE IN GAIN SCORES (D=X-Y)	
	Instr. Group X	Control Group Y	D	D^2	Instr. Group X	Control Group Y	D	D^2	Instr. Group X	Control Group Y	D	D^2
A–1	16.6	15.1	1.5	2.25	22.9	16.5	6.4	40.96	6.3	1.4	4.9	24.01
A–2	14.3	14.2	.1	.01	25.2	14.9	10.3	106.09	10.9	.7	10.2	104.04
A–3	14.4	15.7	-1.3	1.69	19.5	16.4	3.1	9.61	5.1	.7	4.4	19.36
B–1	14.1	13.7	.4	.16	20.1	14.7	5.4	29.16	6.0	1.0	5.0	25.00
B–2	13.7	12.7	1.0	1.00	17.2	13.6	3.6	12.96	3.5	.9	2.6	6.76
B–3	15.7	14.5	1.4	1.96	19.7	15.5	4.3	17.64	3.8	1.0	2.8	7.84
Total all schools	89.0	85.9	3.1	7.07	124.6	91.6	33.0	216.42	35.6	5.7	29.9	187.01
Mean scores, all schools	14.83	14.316	.5167	—	20.767	15.267	5.50	—	5.933	.95	4.983	—

df = n-1 = 5 t obtained = 1.210
t.05 = 2.571
t.01 = 4.032

Finding: Mean scores of the six instructional groups are not significantly higher on the METU pre-test than mean scores of the corresponding control groups.

df = n-1 = 5 t obtained = 5.097
t.05 = 2.571
t.01 = 4.032

Finding: Mean scores of the six instructional groups are higher on the METU post-test than mean scores of the corresponding control groups; the differences are significant at the .01 level.

*Post-test mean scores minus pre-test mean scores.

df = n-1 = 5 t obtained = 4.426
t.05 = 2.571
t.01 = 4.032

Finding: Gain scores of the six instructional groups are higher on the METU than gain scores of the corresponding control groups; the differences are significant at the .01 level.

Table 3. ANALYSIS OF PRE-TEST MEANS, POST-TEST MEANS, AND GAIN SCORES OF EIGHTH-GRADE STUDENTS (t-TESTS)
"Manpower Economics Test of Understanding" (METU)

SCHOOLS	PRE-TEST MEAN SCORES		DIFFERENCE IN MEAN SCORES (D=X-Y)		POST-TEST MEAN SCORES		DIFFERENCE IN MEAN SCORES (D=X-Y)		POST-TEST GAIN SCORES*		DIFFERENCE IN GAIN SCORES (D=X-Y)	
	Instr. Group X	Control Group Y	D	D^2	Instr. Group X	Control Group Y	D	D^2	Instr. Group X	Control Group Y	D	D^2
A–1	16.6	15.1	1.5	2.25	22.9	16.5	6.4	40.96	6.3	1.4	4.9	24.01
A–2	14.3	14.2	.1	.01	25.2	14.9	10.3	106.09	10.9	.7	10.2	104.04
A–3	14.4	15.7	-1.3	1.69	19.5	16.4	3.1	9.61	5.1	.7	4.4	19.36
B–1	14.1	13.7	.4	.16	20.1	14.7	5.4	29.16	6.0	1.0	5.0	25.00
B–2	13.7	12.7	1.0	1.00	17.2	13.6	3.6	12.96	3.5	.9	2.6	6.76
B–3	15.7	14.5	1.4	1.96	19.7	15.5	4.3	17.64	3.8	1.0	2.8	7.84
Total all schools	89.0	85.9	3.1	7.07	124.6	91.6	33.0	216.42	35.6	5.7	29.9	187.01
Mean scores, all schools	14.83	14.316	.5167	—	20.767	15.267	5.50	—	5.933	.95	4.983	—

df = n-1 = 5 t obtained = 1.210
t.05 = 2.571
t.01 = 4.032

Finding: Mean scores of the six instructional groups are not significantly higher on the METU pre-test than mean scores of the corresponding control groups.

df = n-1 = 5 t obtained = 5.097
t.05 = 2.571
t.01 = 4.032

Finding: Mean scores of the six instructional groups are higher on the METU post-test than mean scores of the corresponding control groups; the differences are significant at the .01 level.

*Post-test mean scores minus pre-test mean scores.

df = n-1 = 5 t obtained = 4.426
t.05 = 2.571
t.01 = 4.032

Finding: Gain scores of the six instructional groups are higher on the METU than gain scores of the corresponding control groups; the differences are significant at the .01 level.

Table 2. METU TEST SCORES BY EIGHTH GRADE STUDENTS IN MD/OAEL COURSE

(Detail by School Systems, Schools, and Instructional or Control Groups)[1]

TEST GROUP	MEAN SCORE PRE-TEST	NO. OF STUDENTS	MEAN SCORE POST-TEST	NO. OF STUDENTS	PERCENTAGE CHANGE	NET PERCENTAGE CHANGE	STANDARD DEVIATION	
							Pre-test	Post-test
A-1 (Control)	15.1	93	16.5	87	+ 9.3%		4.76	5.06
A-1 (INSTRUCTIONAL)	16.6	112	22.9	107	+ 38.0%	*+ 28.7%*	5.54	6.75
A-2 (Control)	14.2	117	14.9	116	+ 4.9%		4.44	4.58
A-2 (INSTRUCTIONAL)	14.3	86	25.2	85	+ 76.2%	*+ 71.3%*	4.40	6.65
A-3(Control)	15.7	100	16.4	90	+ 4.5%		4.59	4.81
A-3 (INSTRUCTIONAL)	14.4	126	19.5	114	+ 35.4%	*+ 30.9%*	4.38	6.09
A (Control)	14.9	310	15.8	293	+ 6.0%		4.62	4.84
A (INSTRUCTIONAL)	15.2	324	22.3	306	+ 46.7%	*+ 40.7%*	4.92	6.87
B-1 (Control)	13.7	81	14.7	84	+ 7.3%		4.23	4.60
B-1 (INSTRUCTIONAL)	14.1	87	20.1	84	+ 42.6%	+ 35.3%	4.74	6.47
B-2 (Control)	12.7	81	13.6	74	+ 7.1%		4.69	4.49
B-2 (INSTRUCTIONAL)	13.7	84	17.2	80	+ 25.6%	*+ 18.5%*	4.36	6.11
B-3 (Control)	14.5	79	15.6	76	+ 7.6%		4.19	4.78
B-3 (INSTRUCTIONAL)	15.9	110	19.7	106	+ 23.9%	*+ 16.3%*	4.45	6.29
B (Control)	13.6	241	14.6	234	+ 7.4%		4.42	4.67
B (INSTRUCTIONAL)	14.7	281	19.1	270	+ 29.9%	*+ 22.5%*	4.61	6.38

1 'A' and 'B' represent the two respective school systems which had eighth graders involved in the MD/OAEL course. The numbers 1, 2, and 3 indicate the groups of eighth-grade students in the three different schools in each of the two school systems. Those classes in the schools who received MD/OAEL instruction are designated "instructional" while those who did not are the "control" groups. For information on meaning of various columns see explanation given for Table 1.

APPENDIX B

"SURVEY OF MANPOWER & ECONOMIC ATTITUDES": SUMMARY OF RESPONSES BY EIGHTH-GRADE STUDENTS

The table that follows summarizes the distribution of choices among five possible responses to statements on a 62-item questionnaire made by eighth graders in Lancaster and Zanesville, Ohio, who were enrolled in the experimental MD/OAEL course. The pre-test of the "Survey of Manpower & Economic Attitudes" (SOMEA) was given in September 1967 before instruction began. Post-testing was done using the identical form of SOMEA upon completion of the course in January 1968. (The row designated "Pre" in the table refers to responses given on pre-test. The row designated "Post" indicates responses given on post-test.)

The column at the extreme right in the table, which is labeled "Composite Modal Response", reports the percentage of students expressing positive agreement (by selecting either "Strongly Agree" or "Agree") as a combined total identified as: *A* (Agree). The two responses expressing disagreement ("Disagree" and "Strongly Disagree") were combined to produce a percentage representing the composite response: *D* (Disagree). For example, the pre-test modal response (Agree, 72%) for statement #1 was obtained by summing the "Strongly Agree" percentage (37.0%) and the "Agree" percentage (35.4%). This total (72.4%) exceeded the total for "Undecided" (2.3%) and also the sum (25.1%) of "Disagree" (18.8%) and "Strongly Disagree" (6.3%). Totals in this column of the table are rounded.

A* and D* indicate that the modal response of the students in the original five-response range was the *extreme* choice, i.e., "*Strongly* Agree" or "*Strongly* Disagree" as indicated. Questions that are italicized indicate a significant shift in attitudes of students between the pre- and post-test. The criteria of "significant shift" are: "a shift in the nature of the composite modal response (e.g., from "agree" to "disagree", or from "undecided" to "agree" or "disagree", or vice versa) ; *or* by a change of 10 percentage points or more in the frequency with which the given modal response was selected.

"SURVEY OF MANPOWER & ECONOMIC ATTITUDES": SUMMARY OF RESPONSES BY EIGHTH-GRADE STUDENTS

STATEMENT		NUMBER AND PERCENTAGE OF RESPONSES												COMPOSITE MODAL RESPONSE	
		"Strongly Agree"		"Agree"		"Undecided"		"Disagree"		"Strongly Disagree"		TOTAL			
		No.	%	No.	%	No.	%	No.	%	No.	%	(N)		Answer	%
1. "Workers with more schooling deserve higher wages than workers with less schooling.	Pre	218	37.0%	209	35.4%	14	2.3%	111	18.8%	37	6.3%	589= 100%		A*	72%
	Post	276	48.9	198	35.1	13	2.3	58	10.3	17	3.0	563= 100%		A	80
2. "What is good for American workers is good for the American economy.	Pre	45	7.6	281	47.8	147	25.0	105	17.9	10	1.7	588		A	55
	Post	58	10.3	284	50.4	128	22.7	77	13.7	16	2.8	563		A	61
3. "Labor unions deserve credit for improving the life of the working man.	Pre	108	18.4	289	49.1	80	13.6	90	15.2	22	3.7	589		A	68
	Post	119	21.1	297	52.8	74	13.1	60	10.7	13	2.3	563		A	74
4. *"Employers would rather hire older people (over 35) than young people (under 20).*	Pre	70	11.9	155	26.3	52	8.8	199	33.7	114	19.3	590		D	53
	Post	69	12.3	192	34.2	72	12.8	140	24.9	89	15.8	562		A	47
5. *"A good reason for quitting a job is that you don't like the people you work with.*	Pre	28	4.7	75	12.7	38	6.4	219	37.1	230	39.0	590		D*	76
	Post	54	9.6	150	26.6	46	8.2	178	31.6	135	24.0	563		D	56
6. "Too much spending by the federal government is the main cause of inflation.	Pre	84	14.3	207	35.3	177	30.2	90	15.3	29	4.9	587		A	50
	Post	69	12.3	172	30.6	156	27.7	118	21.0	48	8.5	563		A	43
7. "A more equal distribution of income than we presently have would be a good thing for America.	Pre	99	16.9	249	42.4	125	21.3	87	14.8	27	4.6	587		A	59
	Post	85	15.1	221	39.3	170	30.2	62	11.0	25	4.4	563		A	54

8. "A married worker with a family should be paid more than a single worker even if both do exactly the same job.	Pre	58	7.9	65	11.1	30	5.1	228	39.0	204	34.9	585	D	74
	Post	37	6.6	52	9.2	43	7.6	207	36.8	224	39.8	563	D*	77
9. *"Actually, whatever success I have in my work career depends pretty much on factors beyond my control.*	Pre	46	7.8	129	22.0	151	25.7	148	25.2	113	19.2	587	D	44
	Post	27	4.8	109	19.3	117	20.7	173	30.7	138	24.5	564	D	55
10. "The sharp reduction of people working on farms during the past 20 years is something for the American people to be happy about.	Pre	63	10.7	126	21.4	74	12.6	169	28.7	156	26.5	588	D	55
	Post	39	6.9	93	16.5	113	20.0	183	32.5	136	24.1	564	D	57
11. "If a person plans his education and training carefully, he is almost sure to succeed in his job career.	Pre	268	45.6	224	38.2	21	3.6	60	10.2	14	2.4	587	A*	84
	Post	209	37.1	269	47.7	26	4.6	55	9.8	5	.9	564	A	85
12. "Most employers are sincerely interested in the welfare of their workers.	Pre	96	16.3	312	53.0	81	13.7	88	14.9	12	2.0	589	A	69
	Post	72	12.8	303	53.8	96	17.1	76	13.5	16	2.8	563	A	67
13. "Automation is good for America and ought to be encouraged.	Pre	87	14.8	202	34.4	198	33.7	63	10.7	37	6.3	587	A	49
	Post	97	17.2	206	36.6	136	24.2	74	13.1	50	8.9	563	A	54
14. *"Labor unions are too strong today.*	Pre	79	13.4	162	27.3	146	24.7	167	28.3	36	6.1	590	A	41
	Post	44	7.8	105	18.7	150	26.6	206	36.6	58	10.3	563	D	47
15. "If someone gave me all the money I needed, I'd never go to work.	Pre	60	10.2	73	12.4	40	7.8	193	32.7	224	45.7	590	D*	78
	Post	64	11.4	49	8.7	50	8.9	161	28.6	239	42.5	563	D*	71
16. "You can't get a job as a carpenter, plumber, or electrician unless you have 'connections' with a labor union.	Pre	26	4.4	70	11.9	130	22.1	216	36.7	147	25.0	589	D	62
	Post	21	3.7	74	13.2	114	20.3	221	39.3	132	23.5	562	D	63

"SURVEY OF MANPOWER & ECONOMIC ATTITUDES": SUMMARY OF RESPONSES BY EIGHTH-GRADE STUDENTS

STATEMENT		NUMBER AND PERCENTAGE OF RESPONSES												COMPOSITE MODAL RESPONSE	
		"Strongly Agree"		"Agree"		"Undecided"		"Disagree"		"Strongly Disagree"		TOTAL			
		No.	%	No.	%	No.	%	No.	%	No.	%	(N)		Answer	%
17. *"The government should guarantee everyone in the country a decent standard of living."*	Pre	172	29.2	215	36.5	64	10.9	92	15.6	46	7.8	589		A	66
	Post	125	22.2	181	32.2	87	15.5	123	21.9	47	8.4	563		A	54
18. *"Our country's economic progress is due mainly to the free enterprise system."*	Pre	75	12.8	211	35.9	230	39.1	58	9.9	14	2.4	588		A	49
	Post	107	19.0	255	45.3	164	29.1	31	5.5	6	1.1	563		A	64
19. "I wouldn't care what my job was like, as long as the pay was high."	Pre	36	6.1	67	11.9	27	4.6	204	34.7	254	43.1	588		D*	78
	Post	22	3.9	29	5.1	23	4.1	197	35.0	293	52.0	564		D*	87
20. *"The farmer is the person who contributes most of our economic well-being."*	Pre	106	18.0	238	40.4	113	19.2	112	19.0	20	3.4	589		A	58
	Post	58	10.3	133	23.6	156	27.7	172	30.5	45	8.0	564		D	39
21. *"Business should be controlled and regulated by government to protect the interests of the consumer."*	Pre	56	9.6	182	31.1	154	26.3	125	21.4	68	11.6	585		A	41
	Post	55	9.8	151	26.8	126	22.4	141	25.0	90	16.0	563		D	41
22. "All honest work is worthwhile, and therefor all workers deserve respect.	Pre	279	47.6	212	36.2	33	5.6	48	8.2	14	2.4	586		A*	84
	Post	212	37.8	268	47.8	39	7.0	35	6.2	7	1.3	561		A	86
23. "Work is a necessary evil.	Pre	44	7.5	80	13.6	76	12.9	154	26.2	234	40.0	588		D*	66
	Post	47	8.4	82	14.6	83	14.8	161	28.7	189	33.6	562		D*	62

24. "Most American workers are paid just about what they deserve.	Pre	85	14.5	220	37.5	42	7.2	152	25.9	88	15.0	587	A 52
	Post	61	10.9	252	45.0	64	11.4	116	20.7	67	12.0	560	A 56
25. "You can't believe government statistics.	Pre	30	5.1	86	14.6	220	37.4	194	33.0	58	9.9	588	D 43
	Post	27	4.8	58	10.4	189	33.8	205	36.7	80	14.3	559	D 51
26. *"The business man is the person who contributes the most to our economic well-being.*	Pre	39	6.6	161	27.4	158	26.9	185	31.5	44	7.5	587	D 39
	Post	39	7.0	162	29.0	184	32.9	147	26.3	27	4.8	559	A 36
27. "It's too early to thinking about my life's work.	Pre	20	3.4	38	6.5	15	2.6	178	30.4	334	57.1	585	D* 88
	Post	27	4.8	27	4.8	20	3.6	166	29.6	320	57.1	560	D* 87
28. *"It will be hard for me to find a good job.*	Pre	28	4.8	69	11.8	102	17.4	265	45.3	121	20.7	585	D 66
	Post	24	4.3	103	18.4	141	25.1	202	36.0	91	16.2	561	D 52
29. "The federal government should guarantee eve. one a job.	Pre	65	11.1	148	25.2	75	12.8	200	34.1	99	16.9	587	D 51
	Post	54	9.6	150	26.6	83	14.7	202	35.9	74	13.1	563	D 49
30. *"Labor unions keep the employer from taking advantage of the worker.*	Pre	81	13.8	249	42.5	151	25.6	78	13.2	30	5.1	589	A 56
	Post	129	22.9	262	46.5	113	20.0	44	7.8	16	2.8	564	A 69
31. "Most people who are unemployed are shiftless and lazy.	Pre	95	16.1	159	27.0	50	8.5	173	29.4	112	19.0	589	D 48
	Post	77	13.7	107	19.0	58	10.3	198	35.1	124	22.0	564	D 57
32. *"The only reason most people work is for the money.*	Pre	144	24.4	246	41.7	42	7.1	115	19.5	43	7.3	590	A 66
	Post	95	16.8	220	39.0	56	9.9	141	25.0	52	9.2	564	A 56
33. "Taking it easy on the job is all right as long as you don't get caught by the boss.	Pre	24	4.1	60	10.2	36	6.1	176	29.8	294	49.8	590	D* 80
	Post	14	2.5	61	10.9	41	7.3	205	36.5	240	42.8	561	D* 79

"SURVEY OF MANPOWER & ECONOMIC ATTITUDES": SUMMARY OF RESPONSES BY EIGHTH-GRADE STUDENTS

STATEMENT		NUMBER AND PERCENTAGE OF RESPONSES												COMPOSITE MODAL RESPONSE	
		"Strongly Agree"		"Agree"		"Undecided"		"Disagree"		"Strongly Disagree"		TOTAL			
		No.	%	No.	%	No.	%	No.	%	No.	%	(N)		Answer	%
34. *"The proper objective of all economic activity should be to satisfy the wants of consumers.*	Pre	71	12.1	227	38.7	216	36.7	56	9.6	16	2.7	586		A	51
	Post	116	20.7	256	45.6	140	25.0	43	7.7	6	1.1	561		A	66
35. "Government employees generally aren't as efficient and hard-working as people who work for private business.	Pre	42	7.1	127	21.6	144	24.4	200	34.0	76	12.9	589		D	47
	Post	35	6.2	90	16.0	181	32.2	193	34.3	63	11.2	562		D	46
36. "Luck will play an important role in determining whether I get a good job.	Pre	27	4.6	80	13.7	42	7.2	226	38.6	211	36.0	586		D	75
	Post	28	5.0	77	13.7	59	10.5	234	41.7	163	29.1	561		D	71
37. "Federal government activities in our economic system should be kept to a minimum.	Pre	66	11.5	212	36.2	196	33.5	83	14.2	28	4.8	585		A	48
	Post	42	7.5	203	36.1	204	36.2	99	17.6	15	2.7	563		A	44
38. "High profits are necessary for the survival of our economic system.	Pre	46	7.8	216	36.8	188	32.0	121	20.7	16	2.7	587		A	45
	Post	42	7.5	204	36.5	186	33.3	107	19.1	20	3.6	559		A	44
39. *"Labor unions are the main cause of inflation.*	Pre	39	6.6	87	14.7	247	41.9	188	31.9	29	4.9	590		U	42
	Post	24	4.3	58	10.3	186	33.0	225	40.0	70	12.4	563		D	52
40. *"The major cause of inflation is high profits of business.*	Pre	48	8.1	158	26.8	214	36.3	146	24.7	24	4.1	590		U	36
	Post	51	9.1	180	32.0	192	34.1	109	19.4	31	5.5	563		A	41

41. "Proverty will always be a serious problem for millions of families in the U.S.	Pre	121	20.6	235	40.0	61	10.4	133	22.7	37	6.3	587	A 61
	Post	113	20.1	243	43.3	71	12.7	110	19.6	24	4.3	561	A 63
42. "Good working conditions on the job are more important than high pay.	Pre	138	23.5	254	43.3	91	15.5	85	14.5	19	2.2	587	A 67
	Post	129	23.0	267	47.6	82	14.6	64	11.4	19	3.4	561	A 71
43. *"Taxes are too high in the United States.*	Pre	222	37.8	185	31.5	70	11.9	85	14.5	26	4.4	588	A* 69
	Post	157	28.0	175	31.2	117	20.9	95	16.9	17	3.0	561	A 59
44. *"The worker is a person who contributes most to our economic well-being.*	Pre	117	19.9	256	43.5	134	22.8	64	10.9	17	2.9	588	A 63
	Post	113	20.1	307	54.6	101	18.0	35	6.2	6	1.1	562	A 75
45. "Public schools in Ohio communities generally have enough money to provide a good education for all children.	Pre	169	28.9	265	45.1	50	8.5	72	12.3	31	5.3	587	A 74
	Post	121	21.7	287	51.5	54	9.7	61	11.0	34	6.1	557	A 73
46. *"Men ought to get higher pay than women even if both do exactly the same work.*	Pre	35	6.0	48	8.2	33	5.6	164	28.0	306	35.2	586	D* 63
	Post	23	4.1	37	6.6	44	7.8	144	25.7	313	55.8	561	D* 82
47. "Workers today don't take much pride in their work.	Pre	58	9.9	178	30.4	106	18.1	167	28.5	76	13.0	585	D 42
	Post	50	8.9	161	28.8	97	17.3	188	33.6	64	11.4	560	D 45
48. "The main purpose of our economic system should be to satisfy the needs and wants of the American people.	Pre	138	26.7	268	46.0	116	20.0	49	8.4	12	2.1	583	A 73
	Post	159	28.4	289	51.6	70	12.5	31	5.5	11	2.0	560	A 80
49. "Married women with children under 15 should not hold a job.	Pre	119	20.4	134	23.0	53	9.1	163	28.0	114	19.6	583	D 48
	Post	88	15.7	126	22.5	77	13.8	183	32.7	85	15.2	559	D 48

"SURVEY OF MANPOWER & ECONOMIC ATTITUDES": SUMMARY OF RESPONSES BY EIGHTH-GRADE STUDENTS

STATEMENT		NUMBER AND PERCENTAGE OF RESPONSES												COMPOSITE MODAL RESPONSE	
		"Strongly Agree"		"Agree"		"Undecided"		"Disagree"		"Strongly Disagree"		TOTAL			
		No.	%	No.	%	No.	%	No.	%	No.	%	(N)		Answer	%
50. "People who really want to work can always find a job.	Pre	157	26.9	205	35.1	41	7.0	134	22.9	47	8.0	584		A	62
	Post	126	22.5	191	34.1	39	7.0	159	28.3	46	8.2	561		A	57
51. *"A worker who is a college graduate ought to be paid at least twice as much as a high school graduate.*	Pre	64	10.9	134	22.8	81	13.8	205	34.9	103	17.5	587		D	52
	Post	68	12.1	169	30.1	102	18.2	162	28.8	61	10.9	562		A	42
52. "I think my chances of getting a good job will be a lot better than my father had.	Pre	141	24.1	205	35.1	91	15.6	107	18.3	40	6.8	584		A	59
	Post	154	27.8	201	36.3	84	15.2	82	14.8	33	6.0	554		A	64
53. "Young people need a lot more help in finding jobs than they are getting now.	Pre	114	19.6	257	44.1	91	15.6	103	17.7	18	3.1	583		A	64
	Post	81	14.6	252	45.5	106	19.1	102	18.4	13	2.4	554		A	60
54. "The best jobs go to people who have connections and 'pull'.	Pre	59	10.1	158	27.1	131	22.5	167	28.7	67	11.5	582		D	40
	Post	42	7.5	148	25.0	161	28.9	161	28.9	67	12.0	557		D	41
55. "Women ought to be able to rise just as high in the world as men.	Pre	238	40.7	202	34.5	52	8.9	70	12.0	23	3.9	585		A*	75
	Post	247	44.4	169	30.4	54	9.7	63	11.3	23	4.1	556		A*	75
56. "Industry today should give special preference in hiring and promotion to negro workers over white workers to make up for past discrimination.	Pre	77	13.2	99	17.0	169	29.1	150	25.8	86	14.8	581		D	41
	Post	55	9.9	95	17.0	185	33.2	152	27.2	71	12.7	558		D	40

57. "I'll need a high school diploma in order to get a good job.	Pre	292	50.3	202	34.8	22	3.8	43	7.4	21	3.6	580	A* 85
	Post	246	44.8	229	41.7	25	4.6	38	6.9	11	2.0	549	A* 87
58. *"The government's national debt is getting so big that our country is in danger of going bankrupt.*	Pre	66	11.3	107	18.3	214	36.6	139	23.8	58	9.9	584	U 37
	Post	31	5.6	78	14.0	223	40.0	162	29.1	63	11.3	557	D 40
59. *"The Ohio State Employment Service could probably help me find a good job.*	Pre	69	11.9	324	55.7	114	19.6	55	9.4	20	3.4	582	A 68
	Post	138	24.8	335	60.3	45	8.1	30	5.4	8	1.4	556	A 85
60. "Industry should hire high school graduates rather than dropouts.	Pre	200	34.6	208	36.0	74	18.2	77	13.3	19	3.3	578	A 71
	Post	173	31.1	226	40.6	94	16.9	55	9.9	9	1.6	557	A 72
61. "Government economists contribute more to the economic well-being of our country than businessmen do.	Pre	30	5.2	122	21.3	272	47.5	119	20.8	30	5.2	573	U 48
	Post	29	5.3	93	16.9	259	46.9	135	24.5	36	6.5	552	U 47
62. "An understanding of economics would be very helpful to junior high school students in planning their careers.	Pre	302	52.7	198	34.6	41	7.2	17	3.0	15	2.6	573	A* 87
	Post	325	58.7	170	30.7	37	6.7	13	2.4	9	1.6	554	A* 89

APPENDIX C

SELECTED BIBLIOGRAPHY

The annotated bibliography that follows includes publications that are representative of the information sources and background readings used in the research, planning, and writing of "Manpower Development: Opportunities in American Economic Life" and the other publications that grew out of the MD/OAEL program. The materials in this bibliography contain ideas, concepts, information, and statistical data that are useful to teachers, vocational guidance counselors, economists, businessmen, labor union officials, and others who wish to understand the manpower market and the broader economic and social world.

These selections should be helpful to individuals who are seeking manpower understanding because the publications are basic, relevant, and representative of the literature in the manpower field. The items are listed in the order of their estimated importance and usefulness for those individuals listed above.

A more detailed list of publications appropriate for background reading and reference in the manpower education field can be found in Appendix I, "A Basic Manpower Economics Library", Robert L. Darcy and Phillip E. Powell, *Teacher Manual, Manpower & Economic Education* (New York: Joint Council on Economic Education, 1968).

1. *Manpower Report of the President 1968*, U. S. President and U. S. Department of Labor. Washington: U. S. Government Printing Office, April, 1968. Paperback, 323 pp., $2.25.

   Comprehensive and authoritative source of statistical data, analysis, and information on manpower trends and federal government policies dealing with the manpower dimensions of our economy. Published annually since 1963 under provisions of the Manpower Development and Training Act of 1962.

2. *Occupational Information* (A Career Guidance View), Seymour L. Wolfbein. New York: Random House, 1968. Paperback, SED 8, 146 pp., $1.95.

   A brief introduction to the basic trends in the world of work and its larger social and economic setting.

3. *Automation and Economic Progress,* Howard R. Bowen and Garth Mangum (eds.). Englewood Cliffs, New Jersey: Prentice-Hall, 1966. Paperback, Spectrum Books, S-147, 170 pp., $1.95.

   Problems and possibilities of an economy characterized by rapid and sweeping technological change; includes condensation of the 1966 Report of the National Commission on Technology, Automation, and Economic Progress and selections from supplementary studies.

4. *Automation, Manpower, and Education,* Jerry M. Rosenberg. New York: Random House, 1966. Paperback, SED 5, 179 pp., $1.95.

   Educational implications of technological change and the manpower challenge it creates. Surveys programs designed to meet the manpower revolution, and suggests education's responsibilities in preparing students and others for changing job markets.

5. *Economic Report of the President 1968,* U. S. President and Council of Economic Advisers. Washington: U. S. Government Printing Office, 1968. Paperback, 314 pp., $1.25.

   Detailed look at the U. S. Economy, its recent performance, expectations for the near future, and policies advocated by the President to ensure continuing growth. Special section on economic development and individual opportunity, plus 106 pages of up-to-date statistics. Published annually in January.

6. *Economics: Principles, Problems, and Policies,* 3rd Edition, Campbell R. McConnell. New York: McGraw-Hill, 1966, 791 pp., $8.95.

   Standard college introductory economics textbook which can serve as encyclopedia-type reference.

7. *Employment, Unemployment, and Public Policy,* Seymour L. Wolfbein. New York: Random House, 1965. Paperback, 210 pp., $2.25.

   Brief analytical introduction to the economics of the manpower revolution and government programs designed to deal with manpower problems.

8. *Occupational Outlook Handbook* (Employment Information on Occupations for Use in Guidance, 1968-69 Edition), U. S. Department of Labor, Bureau of Labor Statistics. Bulletin No. 1550. Washington: U. S. Government Printing Office, 1968. Paperback, 763 pp., $4.25.

    Detailed look at present and future occupational structure of the American economy, with several hundred specific job descriptions. Revised edition is published every two years.

9. *The Economic Returns to Education* (A Survey of the Findings), Jon T. Innes, Paul B. Jacobson, and Rolland J. Pellegrin. Eugene, Oregon: University of Oregon, Center For The Advanced Study of Educational Administration, 1965. Paperback, 45 pp., $1.00.

    Survey of major studies undertaken to determine the economic value of education, with 32-item bibliography.

10. *Dimensions of Work: The Sociology of Work Culture,* Nels Anderson. New York: McKay, 1964. Paperback, McKay Social Studies Series, 202 pp., $2.50.

    Introduction to the social framework of work, including the nature and meaning of work in our culture, the "instinct of workmanship", technology, and social change.

11. *Self-Renewal* (The Individual and the Innovative Society), John W. Gardner. New York: Harper & Row, (c) 1963. Paperback, Harper Colophon Books, 1965, CN/544, 141 pp., $1.45.

    Emphasizes the need for continuous change in both the individual and institutions of our society. Suggests that if we are to grow both as individuals and as a nation, we must adopt an outlook on life and institutional arrangements which emphasize the need for innovation and creativity.

12. *Raising Low Incomes Through Improved Education,* Committee for Economic Development. New York: Committee for Economic Development, September, 1965. Paperback, 48 pp., $.75.

    Statement by a private organization of businessmen and educators, recommending certain improvements in education and training design-

ed to raise the productivity and earnings of many Americans who otherwise would have a below-average standard of living. (This pamphlet illustrates the type of material available from private economic-interest organizations on manpower topics.)

13. *Labor Looks at Automation,* Publication No. 21, American Federation of Labor and Congress of Industrial Organizations. Washington: AFL-CIO, December, 1966. Paperback, 36 pp. Single copy free.

    Organized labor's view of the pace of technological change and the need for adopting private and public policies to ensure that the price that society pays for technological progress is not too high.

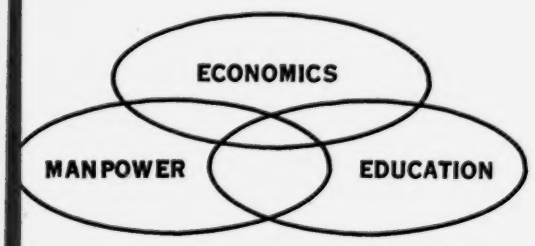
14. *Ohio Labor Market Information,* Ohio Bureau of Employment Services, Division of Research and Statistics, Columbus, Ohio. Subscription free.

    There are six reports in the Ohio Labor Market Information series. "Employment, Hours, and Earnings In Ohio" is issued monthly. "Ohio Labor Market" issued bimonthly. "Shortage and Surplus Occupations" issued quarterly. "County Labor-Force Reports" revised every four months. "Covered Employment and Payrolls" issued quarterly and annually. "Labor Turnover Rates in Ohio" issued monthly.

    Note:
    Similar reports are available in each of the 50 states. Additional reports and data on *state* and *local* employment conditions are also available from the employment security agencies of the various states.

15. *Manpower & Economic Education* (Opportunities in American Economic Life); and *Teacher Manual, Manpower & Economic Education.* Robert L. Darcy and Phillip E. Powell. New York: Joint Council on Economic Education; and Danville, Illinois: The Interstate Printers and Publishers, Inc., 1968. Paperback, 316 pp., $3.50. Paperback, 141 pp., $1.50.

    Revised experimental edition of student and teacher publications that grew out of instructional materials used in MD/OAEL course.



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